a W. R. C. Smith publication

FIFTY CENTS

Textile Industries

Formerly "COTTON"

FEBRUARY, 1957

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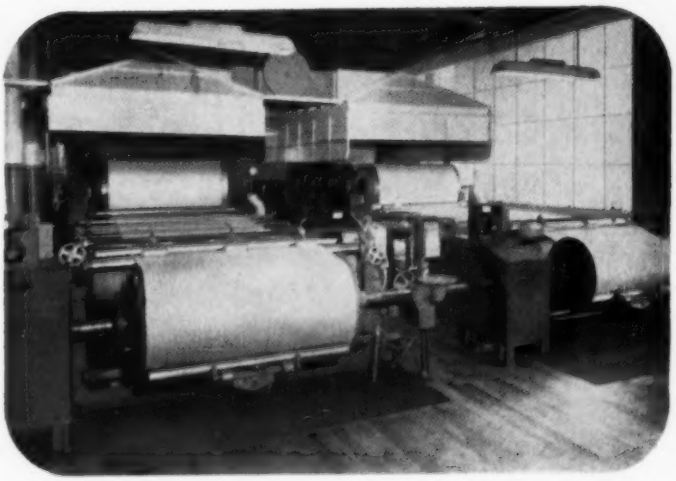
Slash MORE warp at less cost!



West Point Foundry Multi-Cylinder Slashers increase production

They produce consistently for years with dependable, high speed service. Built to take it on heavy *machined* cast iron frames. Extremely versatile — Teflon coating on entering cylinders makes it completely applicable to cotton . . . graduated temperature controls make it perfect for all synthetic warps. Superior control of tension and steam economy are two more profit-making features of West Point Foundry slashers.

YOU HAVE A CHOICE *with West Point Foundry! West Point makes* WITH *MULTI-CYLINDER and AIR-DRI® Slashers. Whether it's a complete slasher installation or modernization of your present equipment, call West Point Foundry, specialists in slashers!*

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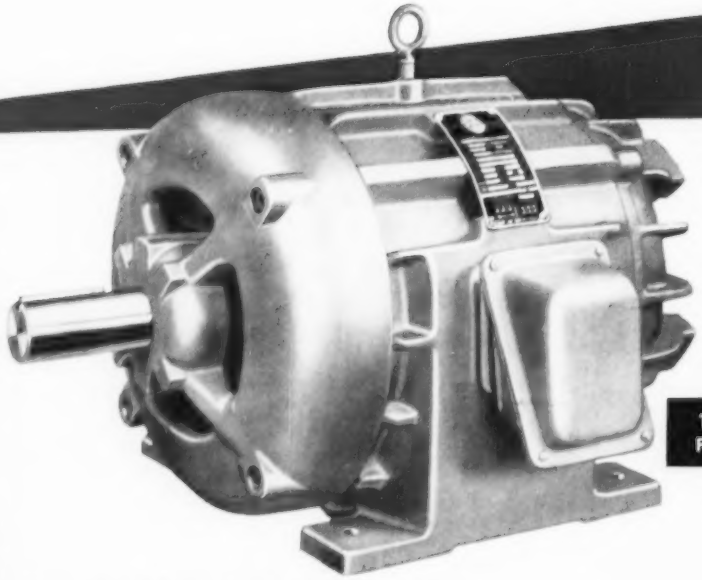

Type "DIL" Totally-Enclosed, Fan-Cooled Textile Mill Motor

new DIEHL streamlined design

Puts more features in less space

Here's a new textile mill motor which has the efficiency, performance characteristics and service factor of an open-type motor with the added advantages of totally-enclosed, fan-cooled construction . . . *yet it's no larger in size than a standard open-type motor (see Fig. A).*

Inside and out, the DIEHL Type "DIL" Motor is designed and built for top performance, maximum protection, long life, ease of installation and ease of maintenance in textile service. Note the heavy duty drive end bearing design, Fig. B, and the versatility in making lead connections, Fig. C.

The Type "DIL" Motor is adaptable to all types of textile machinery and, conforming to NEMA frame sizes and mounting dimensions, may readily be installed beneath spinning and twisting frames.

Write today for full details about this outstanding new development.

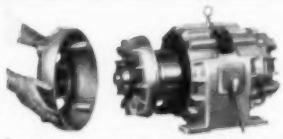

Fig. A

Note the compact space-saving design of fan blade and end-cover, the fan blade serving as part of the motor enclosure. Rotor is partially withdrawn to show the unitized construction of rotor and blade which assures maximum transfer of heat to the ventilating system.

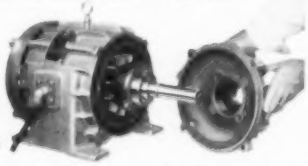

Fig. B

Another important new design feature which helps make this motor the outstanding choice for purchasers of textile mill motors is the locked-in, pre-lubricated heavy duty ball bearing, on the drive end, which assures maximum bearing life.

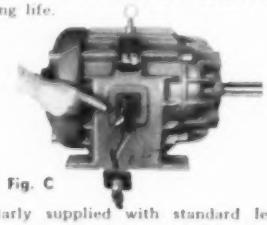

Fig. C

Regularly supplied with standard leads and terminal box. Obtainable with 5-foot type "ST" vinyl-covered cable, oil and watertight fittings, and knife-type disconnectors on the motor terminal leads for convenience in servicing, at slight additional cost.

DIEHL MANUFACTURING COMPANY

Electrical Division of THE SINGER MANUFACTURING COMPANY

Finderne Plant, SOMERVILLE, N. J.

Diehl

[ ] *Please send me* Textile Bulletin No. TI 257

[ ] Have your representative call

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COMPANY

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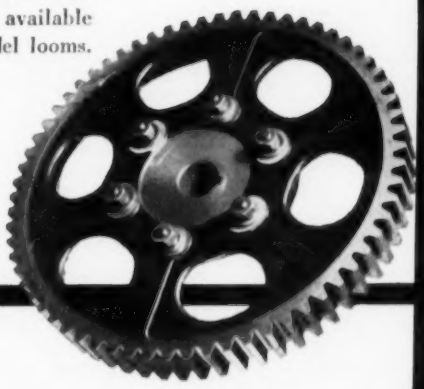
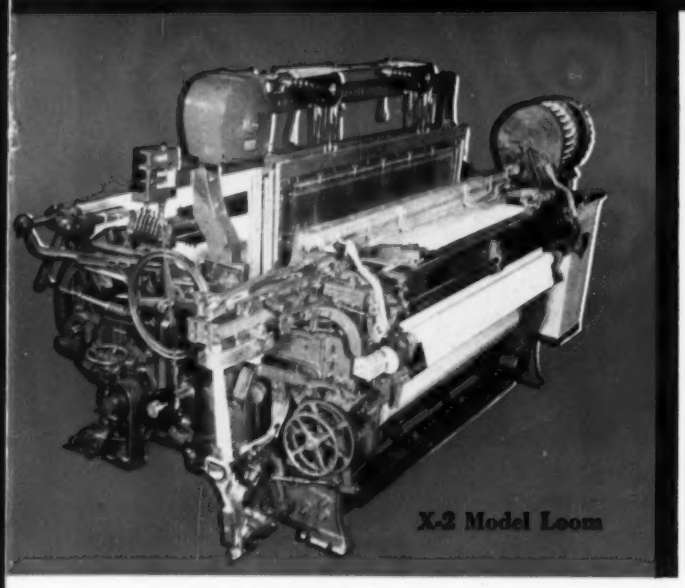
CITY ZONE STATE

Clamping Sword Construction
X-2 type illustrated.
Similar swords available for
X series and E model looms.

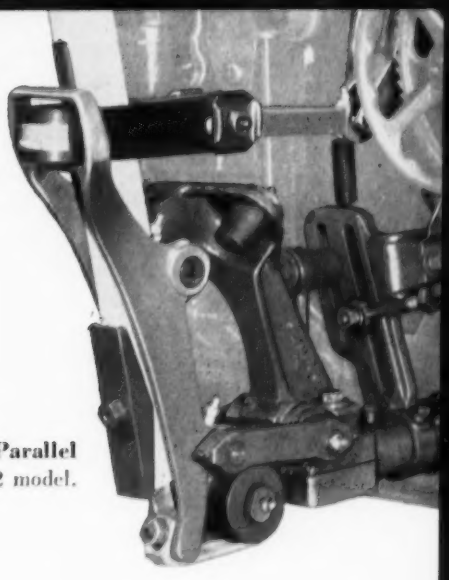
Cam Shaft Gear and Hub
X-2 assembly illustrated.
Similar assemblies available
for XD and XP model looms.



#524 Temple
Currently available
for X and X-2 models.



X-2 Model Loom



Linkage Parallel
Available for X-2 model.

Next to new looms . . .

Looms equipped with the latest mechanisms and improved repair parts, *designed and built by the original manufacturer*, will meet today's rugged performance requirements.

Draper improved repair parts and mechanisms — some of which are illustrated above — are designed to increase loom production, efficiency, and flexibility.

Lower maintenance costs and ease of application are additional benefits derived from the use of Draper repair parts and mechanisms.

Equipped with Draper improved repair parts and assemblies, your existing looms will be second only to *new Draper looms*.

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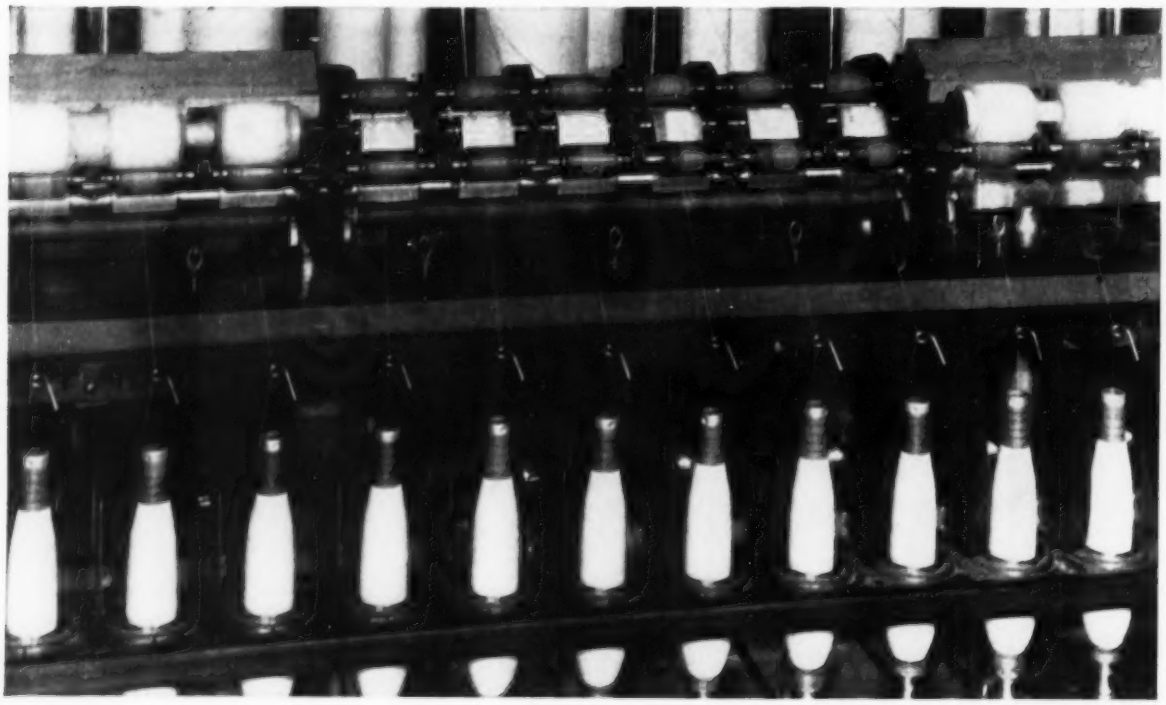
CORPORATION

Hopedale, Mass. *Atlanta, Ga.* *Greensboro, N. C.* *Spartanburg, S. C.*

No oil stains because . . .
STAZON STAYS ON!

● *Operators prefer* ***Texaco Stazon*** *for lubrication of top rolls, saddles, roll stands and shell roll mandrels because it* ***stays on*** *the bearing surfaces—does not splatter, creep or drip. Cleaner yarn results.*



Texaco Stazon is also widely used for loom crank and cam shaft bearings. Cleaner cloth results.

Texaco Stazon is an outstanding textile lubricant. It is not affected by humidity, and does not form gummy deposits. It is easy to apply and feeds properly in any lubricating system—a long-lasting lubricant that requires fewer applications.

For spindle lubrication, use *Texaco Spindura Oil.* It permits full-speed operation with heavy packages. For fiber conditioning, use *Texaco Texspray Compound.* It assures fewer ends down, more uniform count.

A Texaco Lubrication Engineer will gladly help you step up production and reduce costs throughout your mill. Just call the nearest of the more than 2,000 Texaco Distributing Plants in the 48 States, or write:

The Texas Company, 135 East 42nd Street, New York 17, N. Y.

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FOR THE TEXTILE INDUSTRY

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Textile Industries

Formerly "COTTON"

Vol. 121, No. 2
February, 1957

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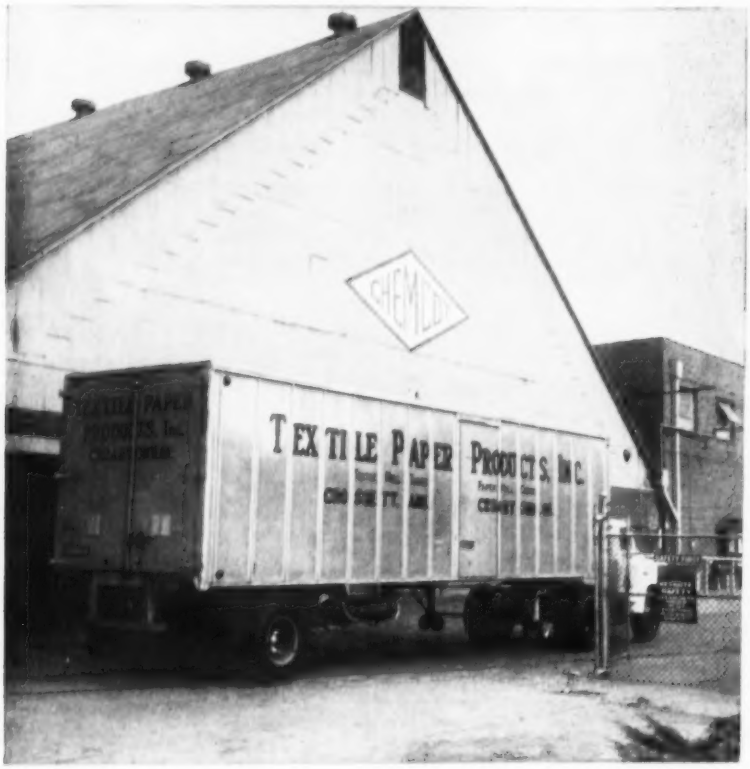

HELPING A MILL'S PROFIT PICTURE, as well as the solution of a technical problem, is close to our hearts here at Textile Paper Products.

For the winding of their product, Southern Chemical Cotton Company required a tough lightweight tube *at reasonable cost*. This we developed for them. An additional advantage they have obtained is over-night delivery by our own fleet. Let us help your profit picture.

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Plants in Cedartown, Crossett, Ark., Bogalusa, La.

by J. C. C.

► We just plumb forgot to mention New Year's resolutions in this here column last month. But we couldn't come up with a better one than last year's, so here it is, a month late—"Be nice to everyone, especially customers."

► We also forgot to give the annual S&R forecast, complete with charts, decimal points, and all figures. Come to think of it, we never did start that annual forecast, complete with charts, decimal points, and all figures.

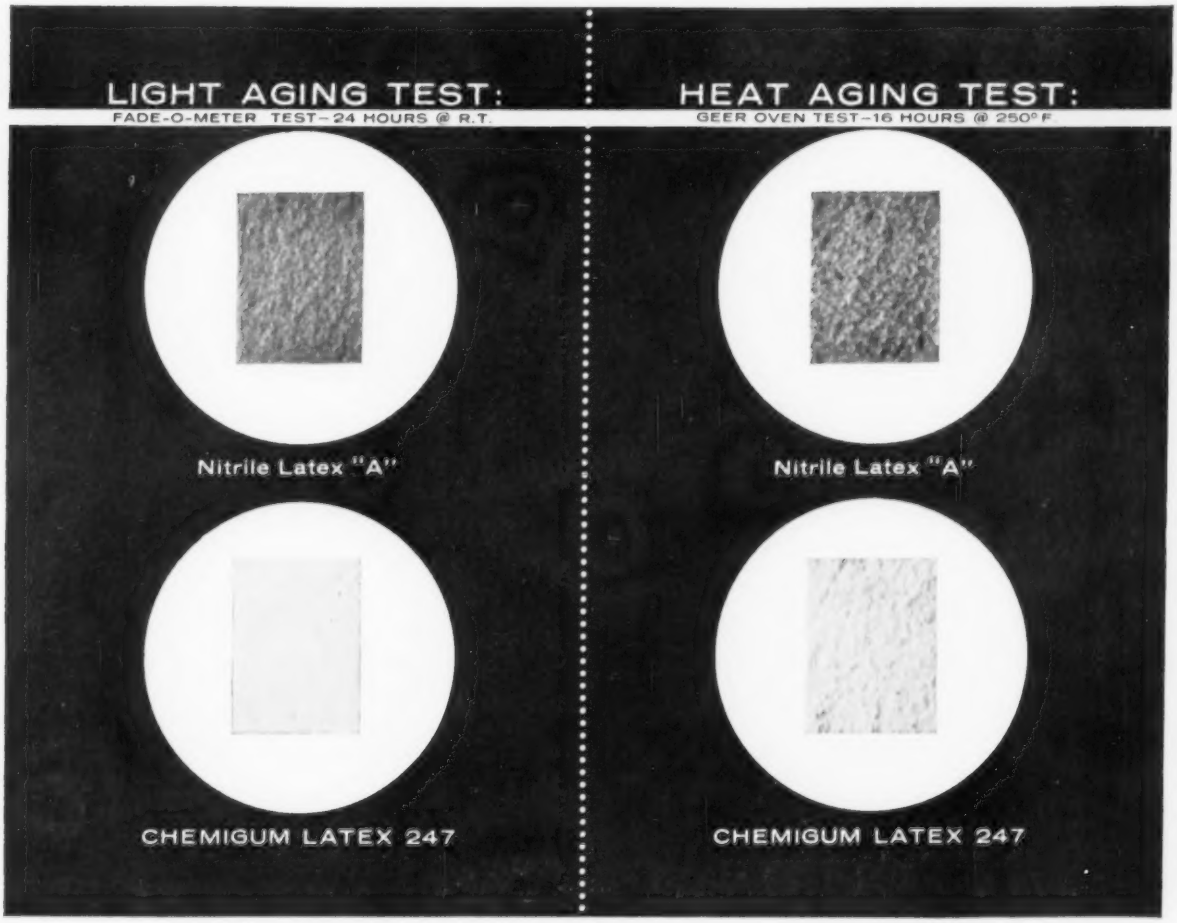
Our Univac machine broke down and our research department departed in tears when we had a request for total annual sales of textile chemicals by years from 1945-1956. We thought we would stump this inquirer with the question: "What are Textile Chemicals?" But he came back, not only with a list of same, but with a figure of something like $701,000,000.00 for 1945. We apologize for so many 0's and for not giving the exact figure, but when you get up that high a few thousands here and there shouldn't matter.

Anyway, about that time the mail man brought a reminder of income taxes, so we abandoned the high figures and left the researchers to their adding machines, slide rules, crystal balls, and almanacs.

Anyone who wants a figure for textile chemical sales annually for the period 1945-56, we'll give it to him, along with yearly sales of rotary joints, number of bleacheries, tufting plants, worsted spindles, number of electric motors replaced annually, number of slashers by states, or what have you. We furnished figures on these and many more in 1956. Most times, we just assume that "In the land of the blind, the one-eyed man is King" and go from there.

The way things look now, all the forecasters are coming up with so many optimistic predictions for 1957 that we believe we will leave it to them. Automobile dealers are behind on orders, and building more all of the time — steel scare. In fact, we'll even go along with that

(Continued on page 10)



This you've never seen before!

Take a close look at the comparisons pictured above. They illustrate clearly the stable light color of new CHEMIGUM LATEX 247. Here is sustained lightness in color never before achieved in a nitrile latex.

CHEMIGUM LATEX 247 is a medium acrylonitrile content latex of medium particle size. This new latex exhibits substantially superior resistance to color change from heat and light aging. This in turn makes CHEMIGUM LATEX 247 an outstanding candidate for all textile applications where sustained light color is important.

Excellent binding action, permanence, improved body and drape plus resistance to wear, wrinkling, raveling, tearing, snagging and sliding are some of the other interesting properties imparted to textiles by CHEMIGUM LATEX 247. For details plus the latest *Tech Book Bulletins* on promising CHEMIGUM LATEX 247 and other CHEMIGUM Latices for sizes, saturants, finishes and adhesives, just write to: Goodyear, Chemical Division, Akron 16, Ohio.

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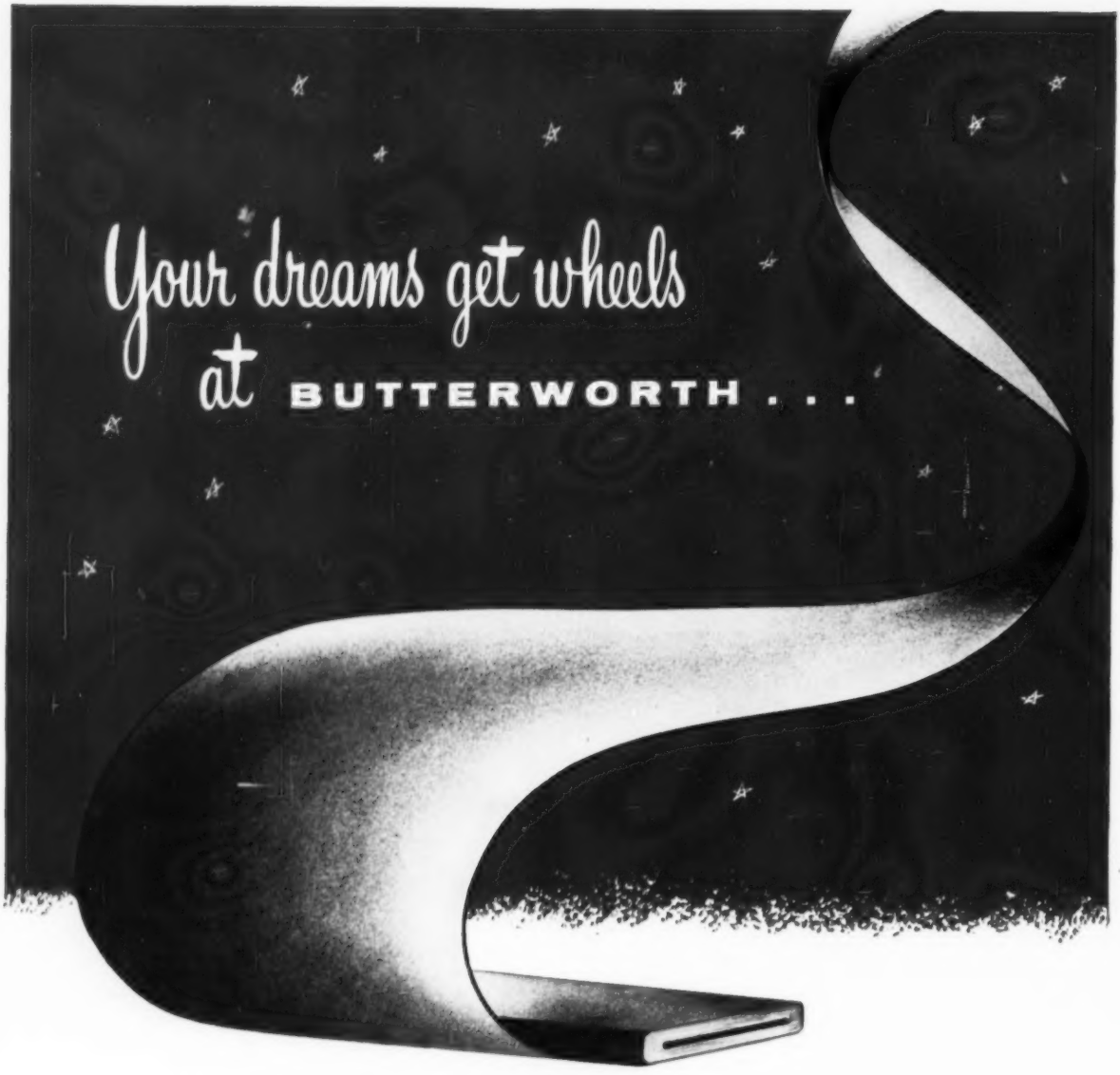

A new fiber . . . a new chemical . . . a new special finish . . .

Your ideas get rolling, when you team them with Butterworth Developmental Engineering. And the results can mean new horizons for the textile industry, new profits for you.

Butterworth engineers, equipment and manufacturing personnel become yours, to mechanize your idea into reality. Butterworth Developmental Engineering bridges the gap between your natural or synthetic fiber and a complete plant, between your new process and a complete range, or between that new special finish and the complete machine you need. Butterworth develops *your* idea for *you* . . . from blueprint to production line, or anywhere in between . . . and in complete secrecy.

Butterworth builds 84 standard machines for textile finishing. Let Butterworth go to work for you on an adaptation of one of these machines or a complete new machine. Add "wheels" to your dreams.

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Developmental Engineering • Research • Machine Building

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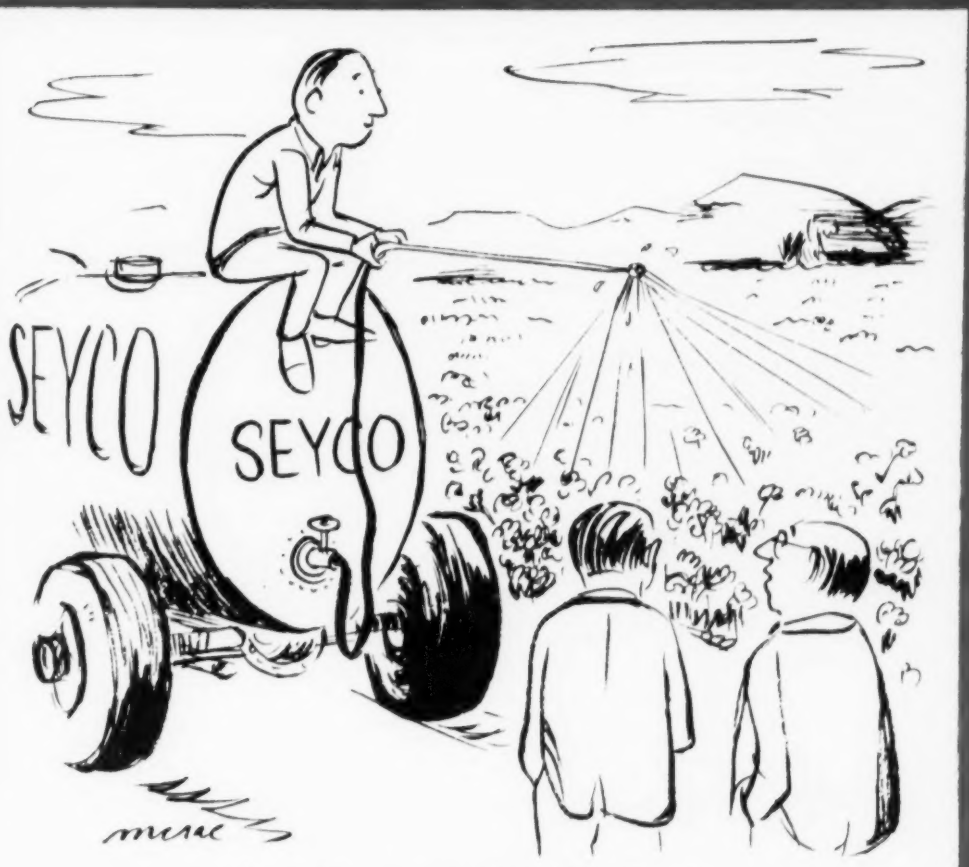

"... cuts out an operation at the mill ..."

Frankly, we're not working on a secret research project to eliminate the slashing operation—after 52 years in the business, we still think it is necessary. We also think technical assistance is helpful at times, and that is why we maintain a fully-equipped and fully-staffed chemical laboratory—to serve you the better.

Warp Sizing: *Softeners, Binders, Penetrants, Ty-In Penetrants, Shuttle Dressing, Waxes.*

Wet Processing Chemicals and Auxiliaries: *Dye Assistants, Penetrants, Rewetting Agents, Sanforized Fabric Oils, Detergents, Scouring Agents, Softeners.*

Niagara Twist-Setter: *Yarn Conditioning Penetrants.*

Seyco Warp Lubricator.

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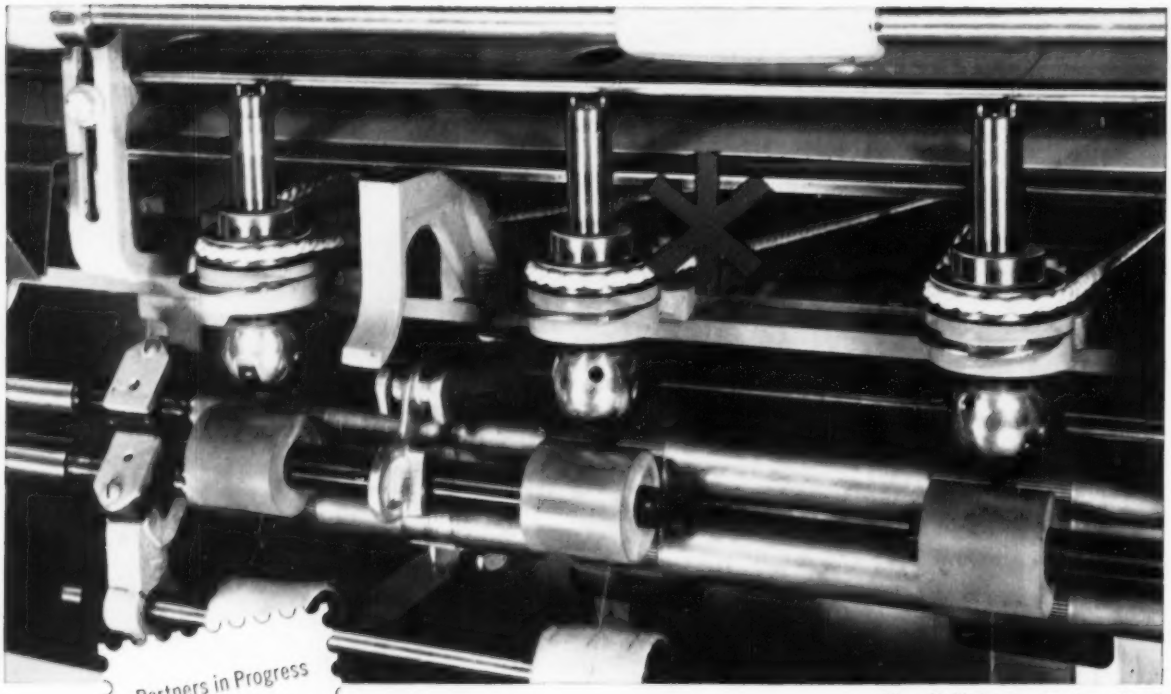


New *Ball Bearing* Twister Head

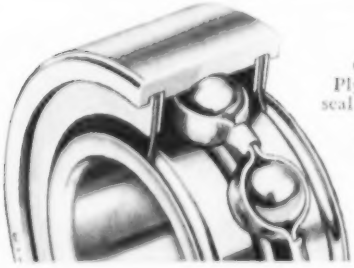
Partners in Progress
WHITIN
33 years
FAFNIR

keep quality up, costs down in wool ring spinning

Whitin Flex-Spin Wool Spinning Frame

By incorporating Fafnir Ball Bearings in the improved twister head construction of the Flex-Spin Wool Spinning Frame, Whitin engineers extended materially the service life of the pulley bands. The uniform low torque of Fafnir precision bearings assures smooth, uninterrupted transmission of power to the nippers. Other advantages include . . . practically no maintenance and positively no oil drip. The Fafnir bearings involved are the wide type, single-row ball bearings with Plya-Seals. The patented Plya-Seals are regarded as the most effective contact-type seals available for keeping lubricant in, contaminants out.

By collaborating with the designers of textile machinery over the years, Fafnir has accumulated a fund of first-hand knowledge and experience in bearing application on textile machinery. Perhaps this knowledge and experience may be useful to you when you're working on new machines. For further information contact The Fafnir Bearing Company, New Britain, Conn.



On wide-type Fafnir Plya-Seal Bearings, the seal washer is assembled between two split steel retaining rings. The seal grooves are brought in from faces.

FAFNIR
BALL BEARINGS
MOST COMPLETE LINE IN AMERICA

MORE THAN 2½ MILLION SPINDLES NOW EQUIPPED WITH ROBERTS HIGH DRAFT

ROBERTS SPINNING NEWS

PUBLISHED BY ROBERTS COMPANY SANFORD, NORTH CAROLINA

VOL. 12 SANFORD, NORTH CAROLINA NO. 2

MOST BALL BEARINGS USED IN ROBERTS SPINNING FRAMES

The use of ball bearings at many key points of a spinning frame not heretofore found possible has been accomplished in the Roberts M-1 frames.

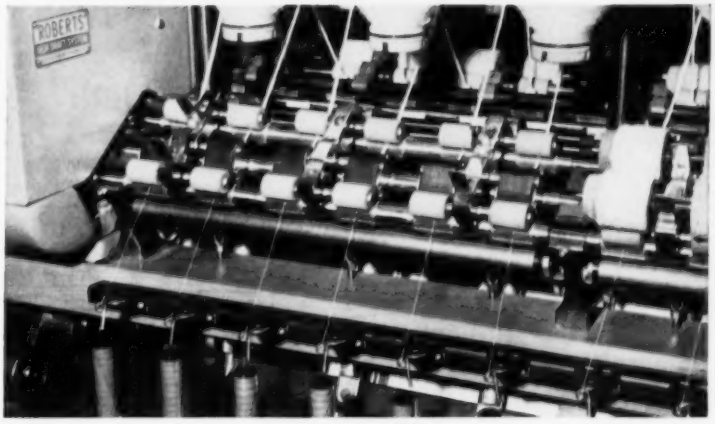
This liberal use of ball bearings results in a spinning frame with smoother performance, greater dependability and freedom from lubrication. The need to replace wearing parts and future maintenance expense is eliminated.

The key points in Roberts Spinning Frames now ball bearing equipped are:

lifting rod rolls
wave shafts
cross shafts
builder motion pivots
crown gear swing arms
complete lay trains
intermediate gears
front roll gears
upright shafts
jack shafts
cylinder bearings
and, of course, in
spindles
tape tension pulleys
top roll suspension system

The long felt desire by practical mill men to apply sealed ball bearings to spinning has been successfully accomplished in the Roberts M-1 Spinning Frames.

ROBERTS TOP ROLL SUSPENSION USES BALL BEARINGS ALL 3 LINES



A top roll suspension system which uses double-row ball bearings in front, middle and back lines and incorporates many other important design advantages has been announced by Roberts Company

BALL BEARING SPINDLES FIND WIDE ACCEPTANCE

Since early 1956 when Roberts Ball Bearing Spindles were first introduced, several hundred thousand have been installed in spinning frames.

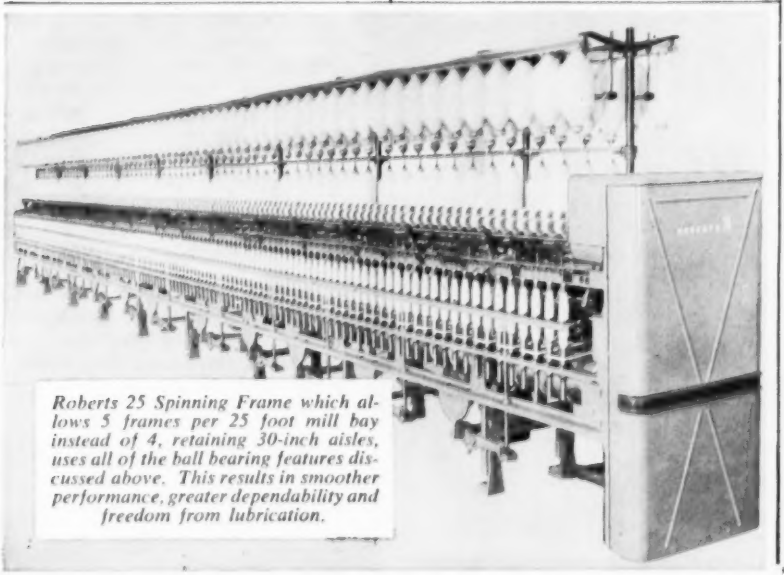
Mill men report their performance exceptionally dependable, even at the highest operating speeds.

Adaptable to several drafting systems as well as its own, the Roberts Top Roll Suspension embodies all the following features, many not found in other arrangements:

1. Cots are buffed on standard equipment, without attachments.
2. Cots revolve together making lap removal simpler.
3. Full length revolving clearers are used.
4. Front and back rolls are interchangeable making sequence buffing possible.
5. All three lines of rolls have double-row ball bearings.
6. Has controlled self-alignment.
7. Cots have ½" hole diameter.
8. 2-piece labyrinth seal is protected from lint entrance and roll picker damage.
9. Double row bearing raceways are ground directly into ½" shafts.
10. Bearings grease-packed for life.
11. Conventional dead-weighting or new spring weighting optional.

An alternative arrangement also available employs a ball bearing top roll and special suspension on the front line only with Roberts Cap Bars and solid top rolls on middle and back top rolls.

Roberts also continues to offer its No-Oil Cap Bar and Saddle system for all three lines, now installed in more than 2½ million spindles.



Roberts 25 Spinning Frame which allows 5 frames per 25 foot mill bay instead of 4, retaining 30-inch aisles, uses all of the ball bearing features discussed above. This results in smoother performance, greater dependability and freedom from lubrication.

Sells sets instead of singles...

Unit of sale steps up when you pack related items together... in a single H&D corrugated box that fairly asks to be carried home. Better see H&D.

HINDE & DAUCH

Subsidiary of West Virginia Pulp and Paper Company

AUTHORITY ON PACKAGING • SANDUSKY, OHIO
14 FACTORIES • 42 SALES OFFICES

Shorts and Remnants

(Continued from page 4)

guy with the charts if he shows up again at the American Cotton Manufacturers Institute to tell us about that 75% possible gain in the textile market by 1965.

The English have their say. Below is an excerpt from a statement by the directors at the 27th Ordinary General Meeting of Combined English Mills (Spinners) Limited as held on December 19th at Deansgate, Manchester, with Sir Cuthbert Clegg, J. P., presiding:

> ". . . On a more hopeful note. Our order books are now bigger and more widely spread than they have been for more than two years. The immediate future appears brighter although it must be clearly emphasized that the problems facing the industry are by no means at an end. . . "

Amen, Brother Clegg, but that's the world for you.

► Looks like the motto for 1957 is — to quote Farragut (loosely) — "Damn the torpedoes. Full speed ahead." How about a little test on your American history. Check below "Who was Farragut?"

(a) Chicago gangster
(b) First U.S.A. admiral
(c) Confederate general
(d) Fireworks manufacturer
(e) Naval commander in War of 1812
(f) Yankee naval hero in Civil War.

For the answer, read the fine print at the bottom of this colmun.

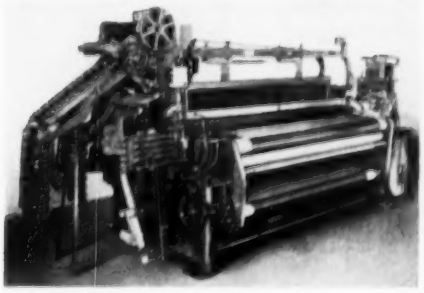
► Now Farragut was not born in February, but we sort of want to save Saint Valentine, Old Abe, and Geo. with his little hatchet for next year. So look out for S&R in February 1958. In the meantime, we'll give you Dan River Mills' purchasing policy and procedure and other feature articles on the finer aspects of textile mill buying right in this here issue, and we hope you like this special section which begins on page 103.

► About a year ago, we wrote about a good textile reader going into chinchilla farming. Now we notice a subscription from Arenel Farms, Shoemakersville, Pa.; one from Johnny's

Answer: We gave you an even chance. If you checked either one or all of (b), (e), (f) you are correct. David Glasgow Farragut was the first U.S.A. admiral, a naval hero at the age of 12 in the War of 1812, and he uttered the often-quoted phrase above in taking the Port of Mobile as the Union naval commander in the Civil War after already clearing the Mississippi by taking New Orleans.

PLAID NEWS

is GLAD news for everybody



Yes, plaids are back . . . new and stimulating plaids. Just look at the retail ads and you'll see . . . *the lads are going for plaids!*

Here's another of those sudden changes that can catch a weaving mill "in a box" . . . unless that mill is ready and equipped with C&K's W-3 or W-3A fancy automatic box looms and the exclusive Select-A-Pic feature that makes it possible to weave automatically many pick-and-pick fabrics which would have to be woven *non-automatically* on any other type of weaving machinery . . . except C&K's New *PAPA* Loom . . . *about which you will soon hear plenty!*

Make no mistake about it . . . this is a fancy box-loom fabric market . . . and getting more so every day. So if you need the looms to go along with the boom . . . see C&K today!

CROMPTON & KNOWLES *Corporation*

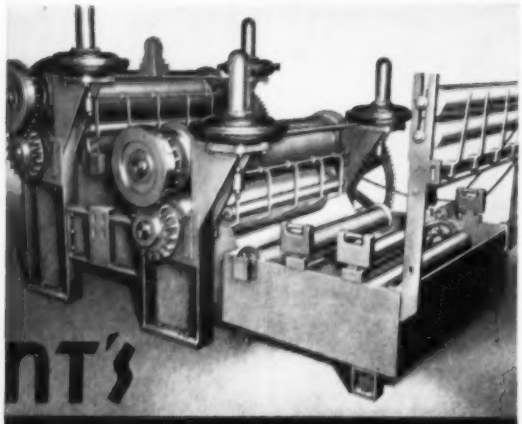
WORCESTER 1, MASSACHUSETTS, U. S. A.

CROMPTON & KNOWLES CORPORATION C&K WORCESTER, MASS. U.S.A.

CHARLOTTE, N. C. • PHILADELPHIA, PA. • ALLENTOWN, PA. Crompton & Knowles Jacquard & Supply Co., Pawtucket, R. I. • Crompton & Knowles of Canada Ltd., Montreal, Quebec

No More Broken Ends

SARGENT'S NEW DESIGN



BACKWASHER and BACKWASH DRYER

ANY FIBRE - ANY BLEND

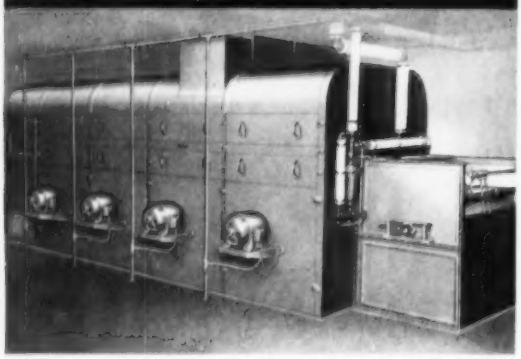
For washing and drying sliver as it comes to the cards

•

For final washing of top before finisher gilling

•

For rinsing and setting of dyed top in ball form



Up to 48 three-ounce ends run through simultaneously — better than 700 lbs. hourly production of card sliver . . . SARGENT-designed so ends are threaded through more easily and quickly than ever before.

Switches on backwasher drives, dryer conveyor, and on gill box are synchronized to start and stop in unison, eliminating danger of broken ends.

Added ease of inspection of ends being dried . . . completely automatic, continuous operation throughout . . . remarkably simple to install, wonderfully easy to operate.

Want more information? Just write your nearest representative or write us direct. And ask for Bulletin No. 203

C. G. SARGENT'S SONS CORPORATION

Graniteville, SINCE 1852 Massachusetts

PHILADELPHIA 19 — F. E. Wasson, 519 Murdock Road
CINCINNATI 15 — A. L. Merrifield, 730 Brooks Avenue
CHARLOTTE, N.C. — W. S. Anderson, Carolina Specialty Co.
ATLANTA, GA. — J. R. Angel, Mortgage Guarantee Building
TORONTO 1, CAN. — Hugh Williams & Co., 27 Wellington St. East

Shorts and Remnants

Shoe Repair Shop, New Orleans, La., American Silver Trust, Cowdensport, Pa.; and finally Chicken Fender in Philly.

You see, TI gets around. Like, for instance, the inquiry from Windfield-Hansen Cotton Mills, Ltd., Vejle, Denmark, wanting to know more about the "bicycle sweeper" [Sept. '56]. So if you have any bicycles that need sweeping, just read TI.

► To a couple of friends of TI over a period of years, S&R wishes health and happiness in retirement. **S. I. "Si" Parker,** 25 years with Ciba Co. and a V.P. of same, writes that he

and his bride expect to settle somewhere near Charlotte or Concord, N. C., near "home." "Si" is a veteran of World Wars I & II and wearer of the Distinguished Service Cross, Silver Star with Oak Leaf Cluster, Purple Heart with Cluster, French Fourragere, and Congressional Medal of Honor. He did not have a picture with medals, but here is another one.

► **Frederick E. Paul,** V.P. of Wildman Mfg. Co. and a friend of many Knitting Shows, retires after 38 years.

► An attractive bound book with some excellent color photography comes to us from **Wm. J. Harshaw,** board chairman of Harshaw Chemical Co., Cleveland, Ohio. It traces progress of this company from a $5 a week rented office in 1892 to a world-wide organization with 1955

(Continued on page 16)

Lanolized® COMFORT IS

"HABIT FORMING"

Once your customers experience the wonderfully soft, smooth caress of *Lanolized* fabric against the skin, nothing else will do — nothing else compares! For sheer, sheer comfort, it's irresistible!

Lanolized comfort is "habit forming" because it builds its own ever-mounting demand. Get in on this nice, nice habit, today!

● LANOLIZED is the miracle comfort-finish in the fabric of your garment. Write for all the facts!

SCHOLLER BROTHERS, INC.
PIONEERS IN THE BETTER FINISHES THAT MAKE THE BETTER FABRICS . . . SINCE 1907

Authorized Manufacturers and Distributors of LANOLIZED—The Miracle Finish. Collins & Westmoreland Sts., Philadelphia 34, Pa. IN CANADA: Scholler Bros., Ltd., St. Catharines, Ontario.

NEW EMERSOFT® 7700

gives you smooth, full-bodied softness

. . . yet saves you dollars!

An efficient, high-quality, nonionic softener, Emersoft 7700 will give your cottons a full-bodied, soft hand at a low cost per yard. Effective also as a top-softener it improves the sewability of resin-finished fabrics.

Emersoft 7700 further provides a lustrous, smooth-faced finish, possesses outstanding resistance to yellowing and scorching, is easily handled, and does not waterspot.

For details on *all* the features of Emersoft 7700 and suggested formulations, mail coupon below.

Emery Organic Chemical Sales Department

Emery Industries, Inc., Carew Tower, Cincinnati 2, Ohio

Emery Industries, Inc.
Dept. T-2, Carew Tower
Cincinnati 2, Ohio

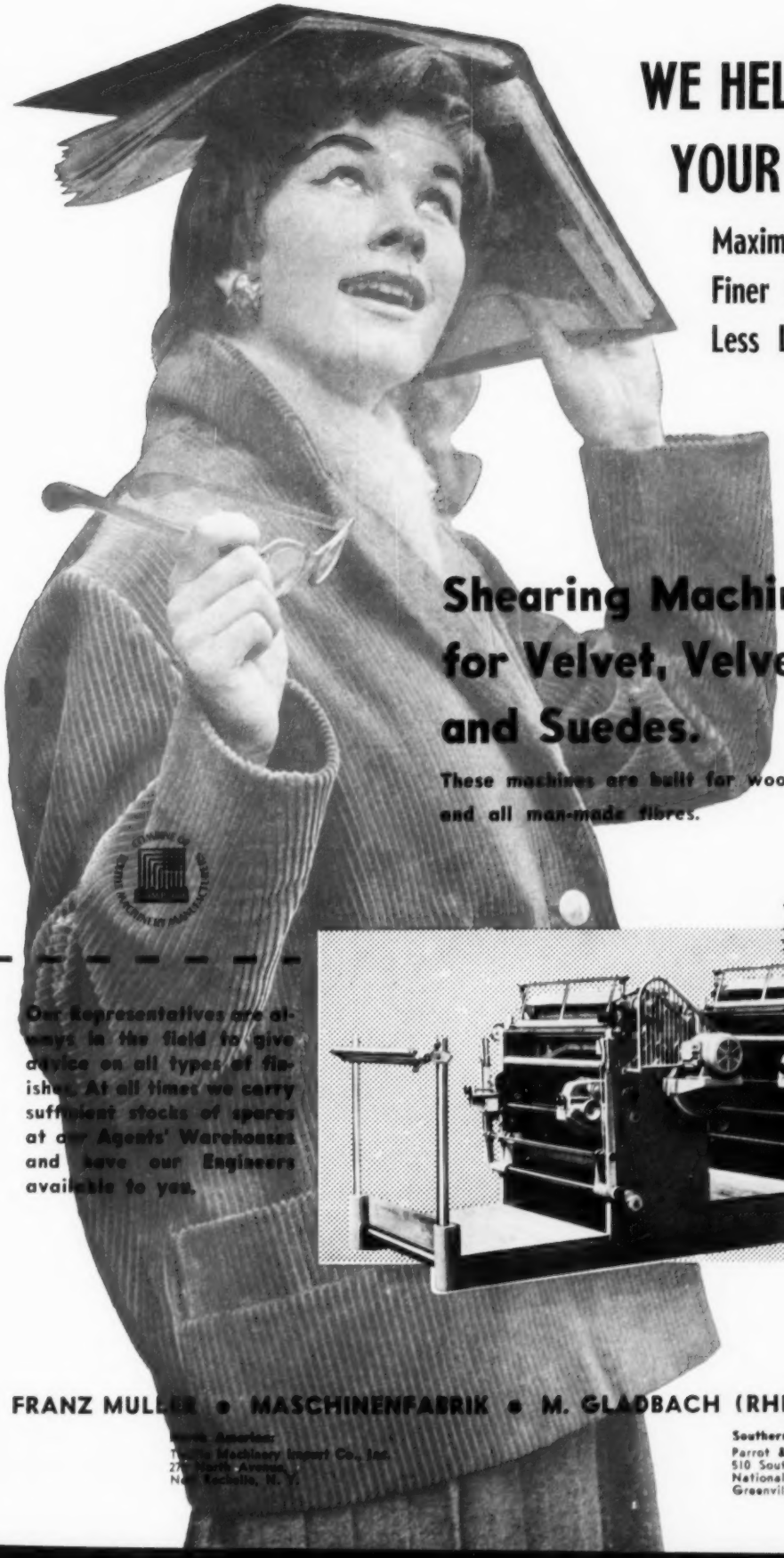
Please send me a copy of bulletin titled "Emersoft 7700".

Name ..... Title .....

Company .....

Address .....

City ..... State .....

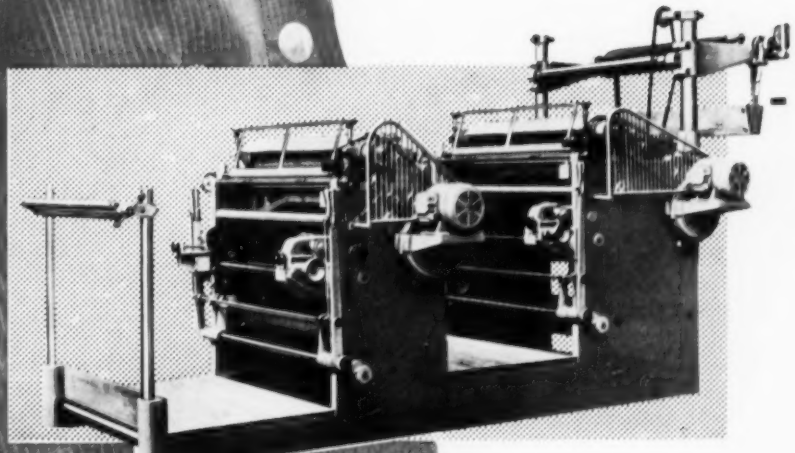


WE HELP TO SOLVE YOUR PROBLEMS:

Maximum Production,
Finer Quality,
Less Labor,

Shearing Machines for Velvet, Velveteen and Suedes.

These machines are built for wool, cotton and all man-made fibres.



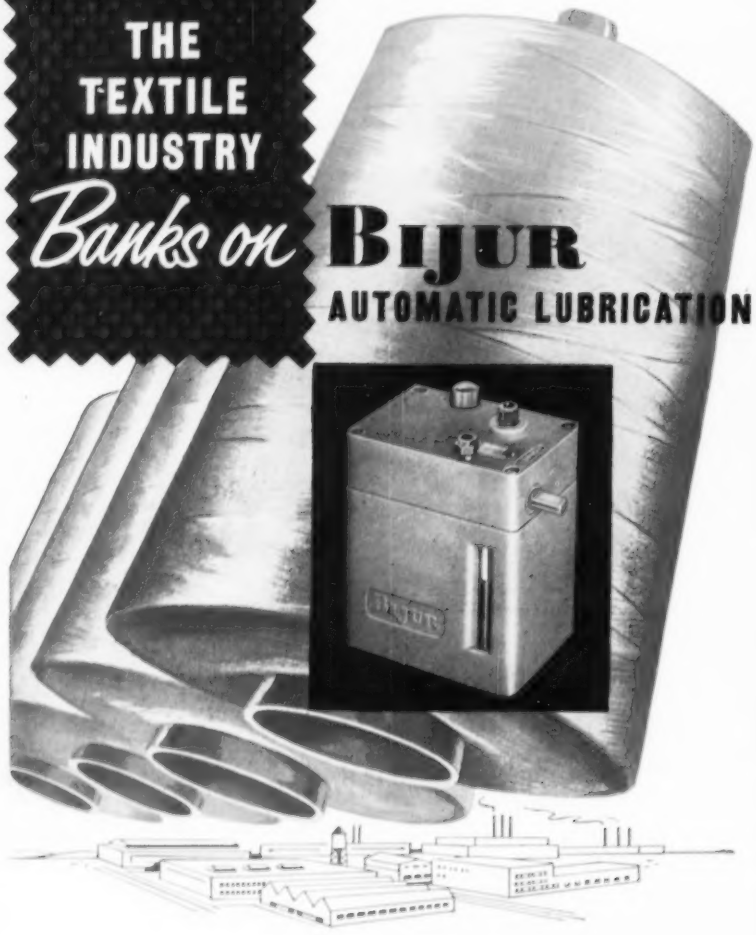
Our Representatives are always in the field to give advice on all types of finishes. At all times we carry sufficient stocks of spares at our Agents' Warehouses and have our Engineers available to you.

FRANZ MULLER • MASCHINENFABRIK • M. GLADBACH (RHEINLAND) GERMANY

North American:
Textile Machinery Import Co., Inc.
270 North Avenue,
New Rochelle, N. Y.

Southern States:
Parrot & Ballentine,
510 South Carolina
National Bank Building,
Greenville, S. C.

THE TEXTILE INDUSTRY *Banks on* BIJUR AUTOMATIC LUBRICATION



In hundreds of mills Bijur Automatic Lubrication is paying big dividends in increased production and lower operating costs.

With Bijur, a machine oils itself —while running. You profit from increased production on every machine. There are no stops for oiling and bearing failures are virtually eliminated.

When your machines are Bijur-equipped, even the most inaccessible bearings get the right amount of filtered oil at the right time.

Your operating costs are cut: oil spots on work are eliminated, personnel injuries are avoided, fire risk is reduced, oil consumption is cut greatly by accurate metering, and you enjoy better housekeeping.

Leading textile mills are banking on Bijur Automatic Lubrication. Let us show you how we can help you do the same.

Colorful, new bulletin, "From Fibre to Fabric," shows the practical benefits that Bijur Automatic Lubrication offers to the Textile Industry. Write for your copy.

BIJUR
LUBRICATING CORPORATION
Rochelle Park, New Jersey
Pioneers in Automatic Lubrication

Shorts and Remnants

(Continued from page 12)

sales of over $60,000,000. "Tested By Time" is the title.

► Another congratulation goes to Tyer Rubber Co., Andover, Mass., whose Pres.-Treas., **Wallace A. Brimer** (right below) received congratulations from his Lawrence, Mass., busi-

ness and professional neighbors on the 100th Anniversary of his firm.

► For $300 a year we learn from Weather Trends Inc. we can get a monthly weather forecast on an exclusive basis for our textile readers. Now that's right nice, and we could say "Another TI first," but what if some of our good readers (we have some) planned holiday and fishing trips and "weather by TI" backfired. No, thank you. We like Grier's Almanac and the patent medicine ads best.

►If you all read the heading "Cotton Chemists Convene in Capitol" [Dec. '56] and wondered what Ike would think of next, our editors explain they could have said "Hotel Statler" but it wouldn't have had that rhythm.

But they had no explanation for the transposition of the two graphs in that article from the Southern Regional Research Laboratory [Draft Proportionment for Medium and Long Staple Cottons on the Long Draft Roving Systems, pp. 114-119, Dec. 1956]. Friend **R. J. (Joe) Cheatham** of SRRL's Cotton Mechanical Processing Section was the first to call our attention to it, and we appreciate his doing this very much. We are glad to publish this correction for the record. The two graphs at the top of page 116 were inadvertently transposed—the one used with the Fig. 3 caption should have been placed over the Fig. 4 caption and vice versa.

(Continued on page 18)

IGEPON® T-33

THE EASY-TO-HANDLE LIQUID DETERGENT

IGEPON T-33 is a clear, homogenous liquid which can be shipped and stored in bulk. It requires no dissolving and can be measured out in dippers or pails, or piped from storage tank to point of usage.

For top performance in textile washing, IGEPON T has long been the answer. With the introduction of the concentrated liquid form, IGEPON T-33, it is now tops in performance, economy and ease of handling. Ask your Antara representative how IGEPON T-33 can do a real job for you in wool, cotton, or synthetic fiber processing.

From Research to Reality

ANTARA gaf

ANTARA CHEMICALS

A SALES DIVISION OF

GENERAL ANILINE & FILM CORPORATION

435 HUDSON STREET · NEW YORK 14, NEW YORK

SALES OFFICES: New York • Boston • Providence • Philadelphia • Charlotte • Chattanooga • Chicago
Portland, Ore. • San Francisco • Los Angeles. IN CANADA: Chemical Developments of Canada, Ltd., Montreal

Igepon T-33 manufactured by General Aniline & Film Corporation is sold outside the United States under the trademark "Fenopon T Liquid."

New 28" cost-saving sweeper for congested areas...

does a 3 hour sweeping job in about 24 minutes

Sweeping 3 to 7 times faster than is possible by hand, this new TENNANT Model 50 Sweeper offers an important new advantage—it *brings low-cost mechanized sweeping to both the congested and open areas.*

Its special compact design and easy maneuverability, for example, make it possible to do a 3-hour handsweeping job in 24 minutes as a rule . . . and do far cleaner work.

Pays for itself in a few months

As it travels down an aisle at 1½ to 8 mph, the sweeper's powerful *vacuum*-enclosed brush cleans a 28" path (40" with sidebrush). Does an excellent job; removes dust and dirt pushbrooms can't reach. *WRITE for details; sweeper is MODERATELY PRICED.*

SPACE-SAVING DESIGN saves time in congested traffic areas. Note efficient flush-with-wall operation.

The "Model 50" has auto-type controls, handles easily. Picks up chips, sand, debris, spillage, dust, and dirt.

G. H. TENNANT Co., 735 N. Lilac Dr., Minneapolis 22, Minn.

TENNANT POWER SWEEPERS

SPECIALIZED MAINTENANCE EQUIPMENT

POWER SWEEPERS • FLOOR MACHINES • SCARIFIERS • ROOF SCRAPERS • CONCRETE ROUTERS

Shorts and Remnants

(Continued from page 16)

► From Clemson College we have a photo of three Westminster, S. C., girls who have enrolled in the Textile School for a course in textile chemistry. It is the first invasion of the distaff side in this school; but

then Mrs. Sara Spearman (center, below) is the daughter of **George Taylor,** Supt. Oconee Mills, and Patricia Singleton's father, **J. P. Singleton,** is Yard Overseer also at Oconee. The third, Barbara Witherspoon (left), is just a "chemistry enthusiast."

► **Harry C. Coley** of Howard Bros. Mfg. Co. writes to say he was getting $15 a *month* as cook on a Mississippi River steamer 50 years ago and not $15 a week as stated in this column last December. He says it was still "a bunch of real swag."

TI's Buyer's Guide Helpful

"Just received your 'Buyer's Guide.' You've done an excellent and very thorough job of cataloging the types of equipment and manufacturers. . ."

EMMETT BRINGLE
National Cotton Council of America
Washington, D. C.

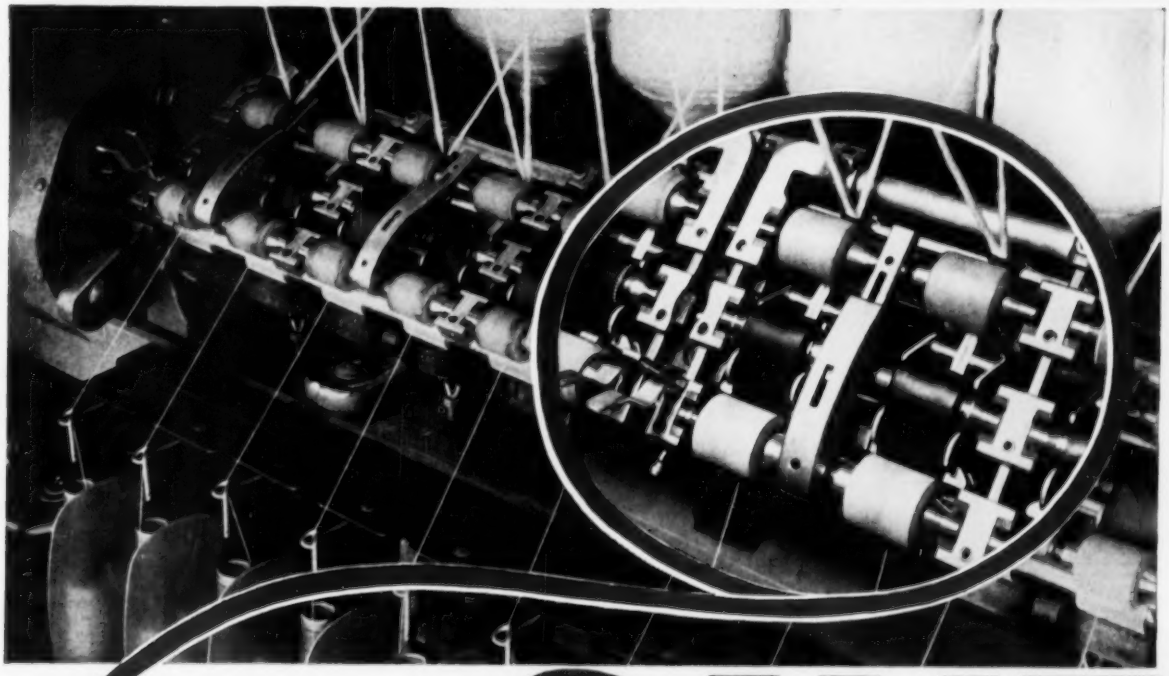
"In your issue of the copy of the Mid-November magazine, you list the names of the manufacturers of Raschel machines. As we are interested in purchasing Raschel machines, we will greatly appreciate it if you would kindly give us the addresses of these manufacturers. . ."

HARRY FRIEDMAN
Harlou Mfg. Co.
New York, N. Y.

► Mr. Friedman must not have seen the note at the top of the page referring him to Section 11 for addresses.

Comments and inquiries on the 1956 ANNUAL EQUIPMENT PARADE & BUYER'S GUIDE are still

(Continued on page 24)



SAVE

ON PRODUCTION COSTS AND INCREASE QUALITY

WITH THE

BOULIGNY TRU-DRAFT

- No gradual build-up of drag as experienced with anti-friction rolls
- More uniform yarn—due to concentricity and free running
- 5/8" dia. rolls afford good cushion — no buffing problems
- Low bearing replacement cost
- Reduced cleaning
- Reduced oiling
- Perfect alignment

2,769,500 spindles are now operating with Whitehead Permalube cap bar nebs and saddles and Bouligny hardened steel rolls.

The Mills in which this equipment is installed report a 30 to 40% return on their investment.

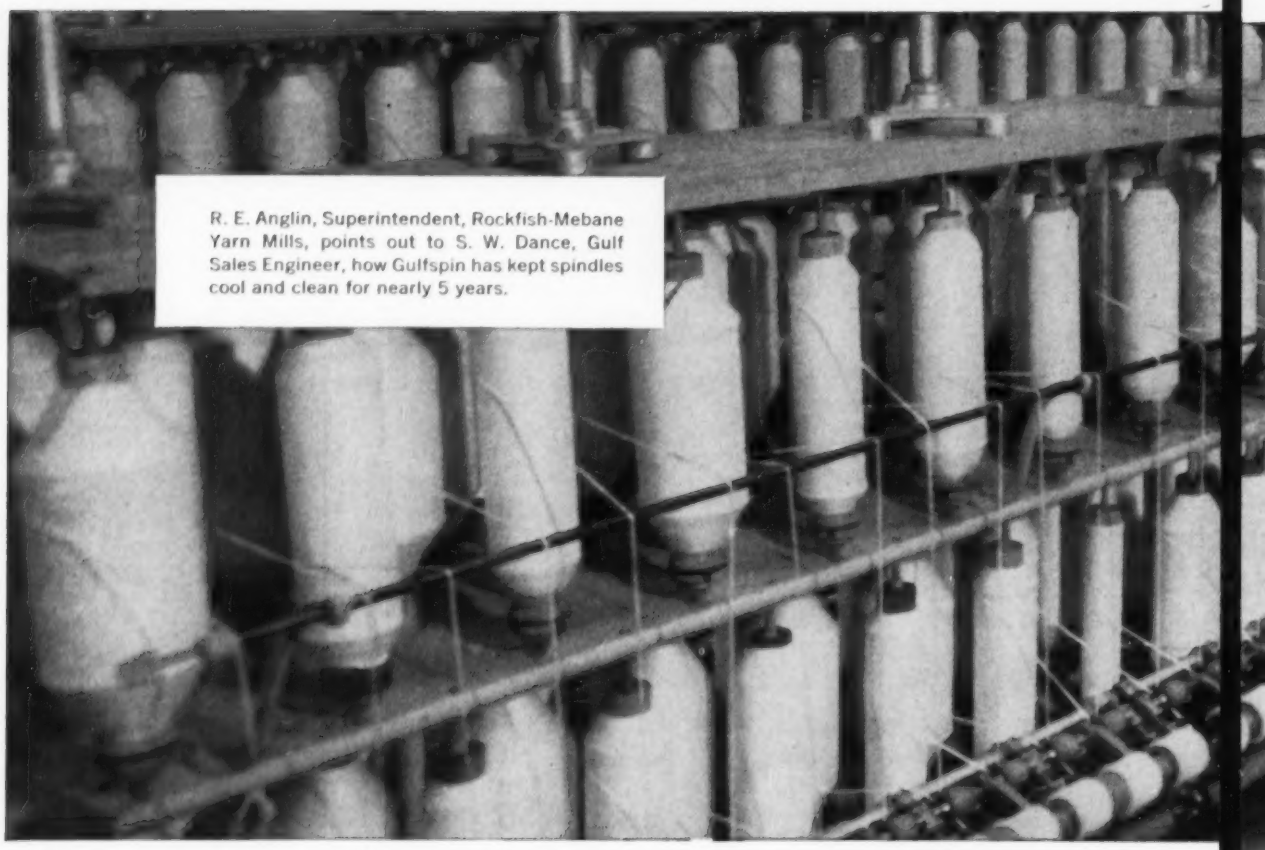
The Bouligny Tru-Draft System is now complete from roller beam up—with Drafts up to 50.

Our trained technical staff can assist you on any spinning problem.

HARDENED STEEL ROLLS • ROLLER STANDS • PERMALUBE NEBS AND SADDLES • CRADLES • COMPOUND GEARING
CYLINDERS • CYLINDER BALL BEARINGS • BALL BEARING TENSION PULLEYS • LIFTER RODS AND BUSHINGS
PERMALITE SEPARATORS

the BOULIGNY COMPANY

DIVISION OF R. H. BOULIGNY, INC.
CHARLOTTE, N. C.



R. E. Anglin, Superintendent, Rockfish-Mebane Yarn Mills, points out to S. W. Dance, Gulf Sales Engineer, how Gulfspin has kept spindles cool and clean for nearly 5 years.

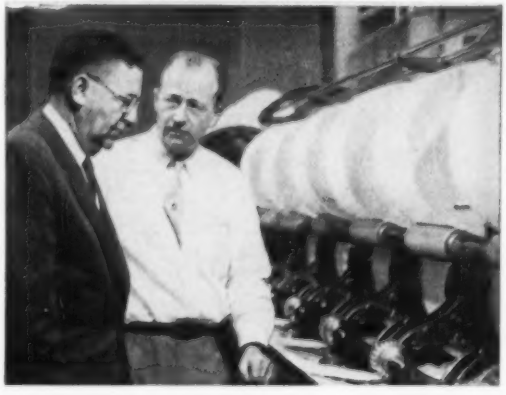
Rockfish-Mebane Yarn Mills cut

Rockfish-Mebane Yarn Mills have used Gulfspin for nearly 5 years to keep spindles performing efficiently. Gulfspin offers immediate savings in 3 different ways: cuts spindle cleaning costs; conserves power, and reduces maintenance costs.

Gulfspin minimizes the formation of sludge, gum and resin that make spindles stick. With Gulfspin, spindles stay clean. You save money on cleaning costs.

Gulfspin viscosity stays the same over long periods of time—8 years in one recently checked mill! Because viscosity doesn't increase, you drive your spindles without wasting power. This means substantial savings in power costs.

Gulfspin also prevents rust, and has exceptionally high load-carrying ability. It



Gulf Harmony Oil is highly resistant to oxidation, lasts indefinitely. It is the oil used to lubricate gears and bearings on this Saco-Lowell Comber.

costs 3 ways with GULFSPIN

provides better protection against excessive wear. By using Gulfspin, you cut costs straight down the line.

Another great oil developed by Gulf and widely used at Rockfish-Mebane is Gulf Harmony. Gulf Harmony provides a tough lubricating film, resists oxidation, leaves no harmful deposits. Available in a wide range of viscosities.

For further information on either Gulfspin, Gulf Harmony Oil—or both—contact a Gulf Sales Engineer at your nearest Gulf office.

GULF OIL CORPORATION
GULF REFINING COMPANY
1822 Gulf Building
Pittsburgh 30, Pennsylvania

THE FINEST PETROLEUM PRODUCTS FOR ALL YOUR NEEDS

GULF

ONE OF A SERIES

You Get Many Benefits By Specifying VICKERS Hydraulics

Reduced Maintenance Costs

Vickers Oil Hydraulic Equipment is built to minimize maintenance . . . has an outstanding performance record. Nevertheless, Vickers recognizes that sooner or later any piece of machinery requires overhaul. So we have developed a service department of exceptional efficiency . . . one that is convenient for you by reason of full time factory-trained service men working out of our offices from coast to coast.

Shown below are several of the practical aids provided to assure you quick and economical service on Vickers Hydraulics.

VICKERS INCORPORATED
DIVISION OF SPERRY RAND CORPORATION
ADMINISTRATIVE and ENGINEERING CENTER
Department 1554 • Detroit 32, Michigan
Application Engineering Offices:
ATLANTA • CHICAGO • CINCINNATI • CLEVELAND
DETROIT • GRAND RAPIDS • HOUSTON • LOS ANGELES AREA (El Segundo) • MINNEAPOLIS • NEW YORK AREA (Summit, N. J.) • PHILADELPHIA AREA (Media) • PITTSBURGH AREA (Mt. Lebanon) • PORTLAND, ORE. • ROCHESTER • ROCKFORD • SAN FRANCISCO AREA (Berkeley) • SEATTLE • ST. LOUIS • TULSA
WASHINGTON • WORCESTER
IN CANADA: Vickers-Sperry of Canada, Ltd., Toronto

SPARE PARTS RECOMMENDATIONS

Our service men will study your situation and make practical recommendations on your spare parts inventory . . . will check your inventory and provide you with printed lists of parts usually required.

SERVICE KITS

Packaged repair kits for many Vickers products are available. These provide all needed parts for quick repair in the field and at minimum cost. In addition, these kits simplify stock problems by reducing the number of loose parts.

PREVENTIVE MAINTENANCE

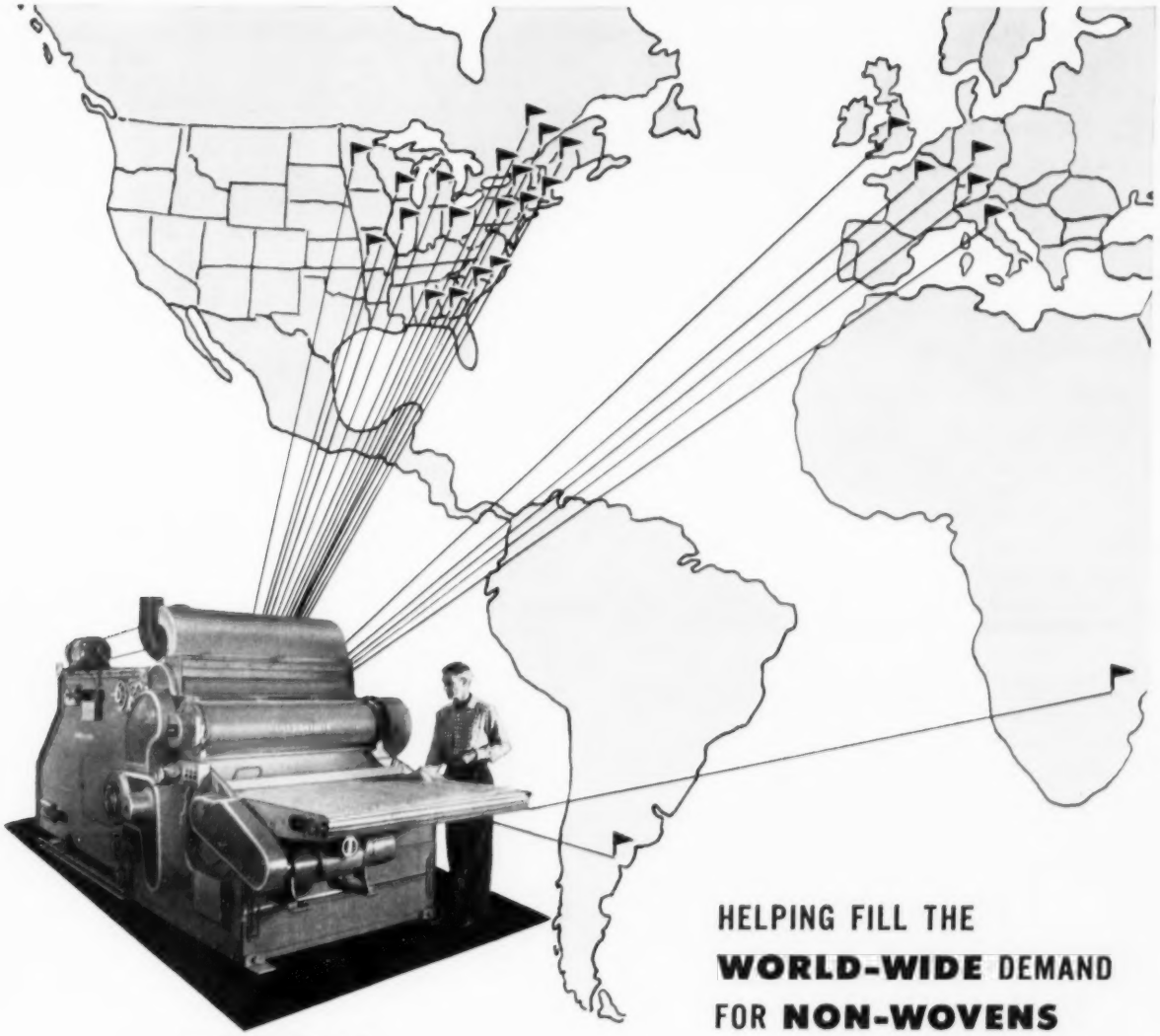
Our service men will gladly set up for you an effective program of preventive maintenance on a timetable basis. This avoids costly down time and keeps maintenance costs at a minimum.

SERVICE SCHOOL

Vickers maintains a Hydraulics Training School for engineering, maintenance and service personnel of both original equipment manufacturers and their customers. For further information, please contact Product Service Department directly.

7143

ENGINEERS AND BUILDERS OF OIL HYDRAULIC EQUIPMENT SINCE 1921



HELPING FILL THE
WORLD-WIDE DEMAND
FOR **NON-WOVENS**

NOW

RANDO-FEEDERS® and RANDO-WEBBERS® are producing RANDO-WEBS® in 8 foreign Countries, 15 States

In just 5 short years these unusual machines have earned world-wide recognition and the acceptance of the textile industry.

WRITE today for details on the *new* 40", 60" and 84" machines. Ask for Bulletin 104.

TEXTILE DIVISION
CURLATOR®
CORPORATION
EAST ROCHESTER, NEW YORK

EXPORT REPRESENTATIVE: Lendt & Company, 535 Fifth Ave., New York 17, N.Y.
SOUTHERN REPRESENTATIVE: Parrott & Ballentine
510 South Carolina, National Bank Bldg., Greenville, S. C.

Shorts and Remnants

(Continued from page 18)

coming in. More on this next month.

Better Combing

". . . if you have any additional information on how to make better quality work [on combers] I would like it very much.

J. E. WHITLOCK

Liberty, S. C.

Wants Hook For Cutting Laps

"Please give us the name and address of some concerns who make hooks for cutting off the lap of rollers on spinning frames. . ."

JOSEPH K. CLASGENS

Pres.
J&H Clasgens Co.
New Richmond, Ohio

To Knit Sweaters in Buenos Aires

"We permit to molest your attention . . . to manufacture ready-made clothes as presented on page 59 in November 1956 issue in General Dyestuff Company's notice . . . We should be grateful to get throug if possible, the name and address of manufacturers of that automatic machine or any similar, some technical an general information; usual manufacturers or providers of necessary spun and the elements required for the installation of a plant in the Argentine Republic which is our purpose. . ."

ITESA

Aizpurua 2467
Buenos Aires

► He's not molesting. We sent names of full-fashioned sweater machinery concerns. Any reader wishing to send further data, please do so.

Waste Control

"I am overseer of the waste control program . . . . and would like for you to send me any available reprints on Waste Control Programs that have been published in the TEXTILE INDUSTRIES magazine. . . . "

OTTIS L. KOONTZ

Woodside Mill
Simpsonville, S. C.

Winding Series Interesting

"We would greatly appreciate receiving 10 copies of the reprint on 'Winding Principles and Practices' by J. Stribling of Universal Winding Company. We find this article exceptionally interesting and informative."

J. A. BRADSHAW

Mgr. The Linen Thread Co., Inc.
Paterson, N. J.

► **I. Kaplan,** A. R. Rosenthal & Co., Inc., N. Y., wrote for extra copy of June '56 with Sjostrom Machine item on electric eye control of machine cutting materials for Artcraft Handkerchief Mfg. Co., Passaic, N. J.

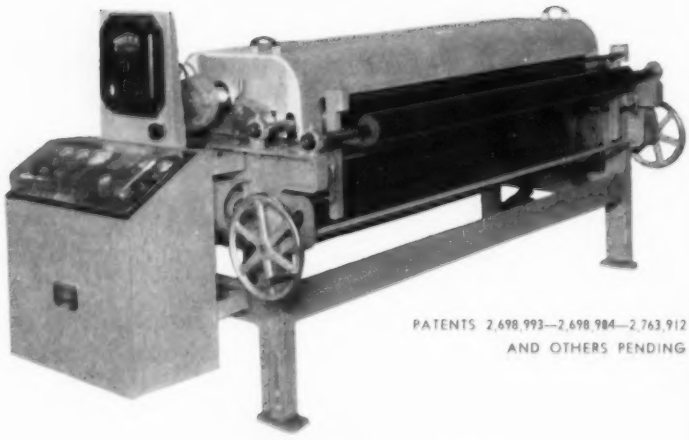
J. MeyBeck, Centre de Recherches Textiles de Mulhouse (France), and **Julian Berch,** Harris Research Lab., Washington, D. C., wrote Dr. Paul Seydel for reprints on current "Warp Sizing" series. This series will be reprinted as a book upon completion of publication.

Advertising manager of a big electric motor concern stopped in to see us the other day, and we showed him some typical inquiries of that day. One was for him from a big machinery manufacturer. And cross our hearts, it wasn't a put-up job. Just good TI service.

► See you next month.

PERFECT SIZING "under cover"

will keep YOUR LOOMS in "the race"!



PATENTS 2,698,993—2,698,984—2,763,912 AND OTHERS PENDING

OVER 200 GRIFFIN SIZE APPLICATORS NOW SUPPLY LOOMS . . .

- WEAVING MORE YARDS
- MAKING BETTER CLOTH
- USING LESS SIZE
- HAVING LOWEST COST

LICENSEES: **(non-exclusive)**

WEST POINT FOUNDRY & MACHINE CO.
West Point, Ga.

THE TEXTILE SHOPS
Spartanburg, S. C.

IRA L. GRIFFIN & SONS
P. O. BOX 1576 CHARLOTTE, N. C.

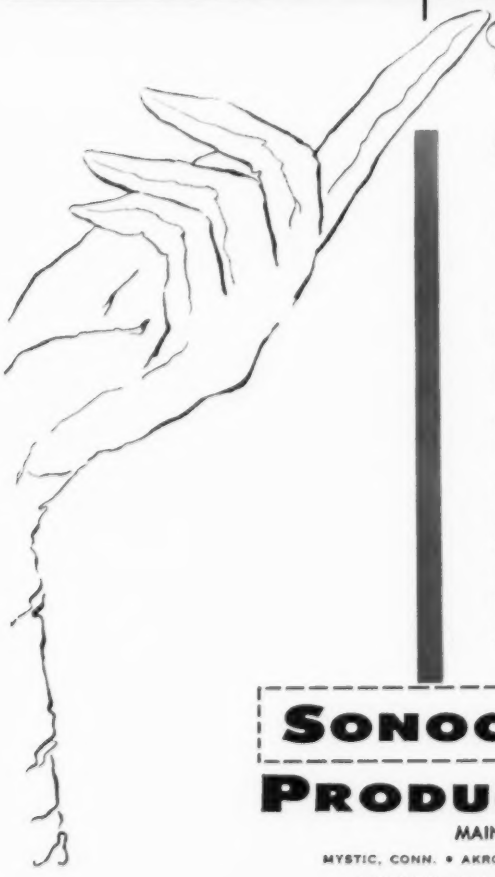
SONOCO

DYTEX® TUBES

WITH

Exclusive

PLASTAVON SLEEVES



The right combination to eliminate objectionable and discoloring matter in package dyeing

SONOCO Dytex Tubes are accepted by the industry for all standard forms of package dyeing. The exclusive Plastavon Sleeve allows more even distribution, better "flow" and filters out objectionable and discoloring matter . . . and provides a "cushioning" effect between the yarn and the tube.

SONOCO Dytex Tubes are backed by 20 years' experience in laboratory and in-use development. Standard sizes: 5/8" I.D. x 6 3/4" long and 1 5/8" I.D. in varying lengths. Special sizes available. Can be furnished in certain colors for identification. Consult your Sonoco sales-engineer or write us direct.

SONOCO

PRODUCTS COMPANY

MAIN OFFICE — HARTSVILLE, S. C.

MYSTIC, CONN. • AKRON, IND. • LOWELL, MASS. • PHILLIPSBURG, N. J.

LONGVIEW, TEXAS • PHILADELPHIA, PA. • LOS ANGELES, CAL.

GRANBY, QUEBEC • BRANTFORD, ONT. • MEXICO, D. F.

sonoco — PAPER CARRIERS — REG. U.S. PAT. OFF.

DEPENDABLE SOURCE OF SUPPLY

Personal NOTES
ABOUT MEN YOU KNOW

C. E. Anderson, manager of Excelsior Mills at Rutherfordton, N. C., and at Union, S. C., has been named manager also of Kingstree (S. C.) Mills. All three plants are properties of Deering, Milliken.

The Young Men's Board of Trade named **Ralph J. Bachenheimer,** manager of the Haynsworth Division, Woodside Mills, Iselin-Jefferson Co., Inc., New York, N. Y., as "Textile Young Man of the Year." The award, in the form of a testimonial scroll, was designed to give recognition to young leaders in the textile industry for outstanding civic and industrial achievement.

Oliver B. Beckwith, formerly senior research associate in charge of quality control for Fabric Research Laboratories, Inc., Dedham, Mass., has been appointed quality control director of The William Carter Co., Needham Heights, Mass.

J. A. Dixon, assistant general sales manager for Courtaulds (Canada) Limited in Montreal, Quebec, has

Mr. Dixon

been appointed general sales manager, succeeding **P. W. Webb** who has resigned to take charge of the textile operations of the W. R. Grace Co. of New York. Mr. Dixon is also president of The Textile Technical Federation of Canada.

Filling a new position, that of vice-president of manufacturing, at Doric Textile Mills, Ltd., Montreal, Quebec, Canada, is **Marc. J. Besso,** who had been supervisor of production.

New general manager of Guilford Mills, Greensboro, N. C., is **Shelton Thomas,** previously mill manager of the Robbins, N. C., plant of Amerotron Corp.

A plaque honoring the late **Donigan Dean Towers,** former vice-president and general manager of Anchor Duck Mills, Rome, Ga., was unveiled at the Georgia Institute of Technology in Atlanta, Ga., his alma mater. The plaque is on the Towers Residence Hall on the Georgia Tech campus. Mrs. Towers was among those present at the unveiling.

Charles L. Zimmerman has been named assistant director of research for Dan River Mills, Danville, Va. He was formerly head of dye application

TENNESSEE CORPORATION
LIQUID
SULFUR DIOXIDE
HIGHEST QUALITY
SO_2

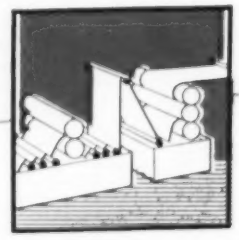
for Effective Removal of

Residual Chlorine!

Tennessee's Liquid Sulfur Dioxide Is a Most Efficient and Economical Antichlor.

SO_2 accomplishes the following . .
Acidifies alkaline hypochlorite making it easier to wash out.
Reduces chlorine to the harmless valence Cl-!
Leaves fabric acid free.

Available In:
- CYLINDERS
- TON DRUMS
- TANK TRUCKS
- TANK CARS



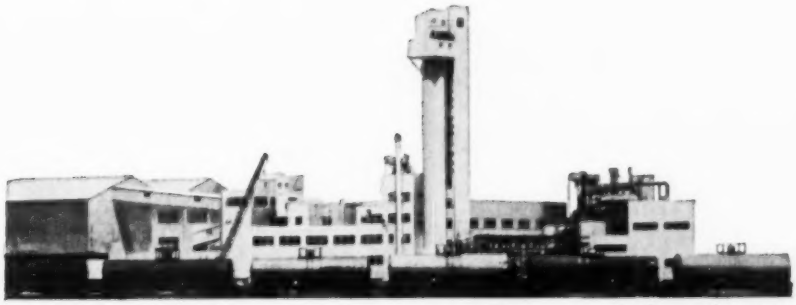
We would like to consult with you on the possibilities of Tennessee's Liquid Sulfur Dioxide in your processing.

Tennessee's Liquid Sulfur Dioxide practically 100% pure, is also very effective as a reducing, bleaching and neutralizing agent, and pH control.

TENNESSEE CORPORATION

617-629 Grant Building, Atlanta, Georgia

your Two best sources for UREA



Allied

...and

Allied

Allied's Nitrogen Division has 2 urea plants – one at South Point, Ohio and one at Omaha, Nebraska. When considering your source of UREA supply, Allied tops the list with its multi-plant production. Quality? Very high. Delivery? Fast – no matter where you are, thanks to widely separated producing locations. Carlots and trucklots from the plants. LCL from warehouse stocks in Passaic, N. J.; Chicago, Ill.; Providence, R. I.; East St. Louis, Ill.; and Charlotte, N. C. All shipments in easy-to-use, 100 lb. moistureproof multiwall paper bags.

U 1-29-5

Allied Chemical — NITROGEN DIVISION

40 Rector Street, New York 6, N. Y.

Ethanolamines • Ethylene Oxide • Ethylene Glycols • Urea • Formaldehyde • U. F. Concentrate—85 • Anhydrous Ammonia • Ammonia Liquor • Ammonium Sulfate • Sodium Nitrate • Methanol • Nitrogen Tetroxide • Nitrogen Solutions • Fertilizers & Feed Supplements

Thousands of Perfect Packages

for only $1.25 per flyer

By the time your flyers jump, wobble, or vibrate noticeably they have already produced thousands of pounds of inferior roving thus causing poor quality yarn and fabric seconds. When flyers start choking up—when roving jerks—or when ends start running over at the top or the bottom of the bobbin, your flyers are beginning to wear and are costing you money. An Ideal Flyer Rebuilding job will give you new flyer performance and new flyer length of service. This full service costs only $1.25 for most sizes, and includes exclusive features such as full length die-swaging, heat treating for extra rigidity, dynamic balancing for your operating speeds, and the Ideal rust and tag resisting finish. This is a complete rebuilding job—not a quick once-over repair. Let an Ideal representative check your flyers and spindles—without obligation. We will be glad to loan you replacements while yours are being rebuilt.

Ideal Machine Shops, Inc., Bessemer City, N. C.

Continuous Service to Textile Mills Since 1925

Personal NOTES ABOUT MEN YOU KNOW

research work for American Cyanamid Co., Bound Brook, N. J.

Francis P. Stuart is now superintendent of Canada Hair Cloth Co. Ltd., St. Catherines, Ont., succeeding J. L. Schoular.

At Gallin Knitting Mills, a subsidiary of Lampl Fashions, Inc., Cleveland, Ohio, **Alex Brown** is now manager and **Ray Bruggeman,** superintendent.

The American Standards Association has appointed as director of public relations, **Kenneth G. Ellsworth** who was formerly associated with the American Thread Co. in a similar capacity. At ASA he succeeds **George P. Paine** who was recently appointed executive secretary of the American Association of Textile Chemists and Colorists.

Mr. Ellsworth

John M. Reeves, chairman of the board of Reeves Brothers, Inc., New York, N. Y., was selected to receive the 6th annual "Textile Award" presented by the New York Board of Trade's Textile Section in recognition of an individual's "character, achievements, and record of outstanding contributions to the textile industry." * * * The company announces the election of **Jerry H. Wyatt, Joe D. Moore, Gordon Coles,** and **Frank C. Rogers** as vice-presidents. **Charles D. Green,** vice-president and general manager of southern operations, was named a director. Mr. Moore is in charge of finished goods sales, Mr. Coles directs the company's finishing operations, and Mr. Rogers and Mr. Wyatt are in grey sales and grey mill management.

William Stanley, formerly boss carder at Huntingdon (Quebec) Woolen Mills, is now overseer of carding

(Continued on page 38)

Whitin-Schweiter FILL-MASTER* Filling Winder

The latest addition to Whitin's winder line, the Whitin-Schweiter FILL-MASTER Automatic Filling Bobbin Winder, is a highly versatile machine — a fully automatic, high speed, filling winder with many attractive and unusual features. Among these, a new exhaust device will be very advantageous to all mills encountering dust, lint, and fly in the rewinding process. Each supply package and tension device is housed in a transparent enclosure from which fly, etc., is removed to a dust collector.

ADDITIONAL FEATURES

- Speeds up to 10,000 R.P.M.
- Tail-less Bobbin
- Scissor and Tail Cutter eliminated
- Spindle speed adjustable over wide range for every spindle position
- Automatic empty bobbin loader or new manual or loaded multicell magazine
- New variable layer locking traverse prevents sloughing
- Quick positive adjustment for wound bobbin diameter
- Will handle bobbins up to 10⅛"

* Trade Mark

Whitin
MACHINE WORKS
Whitinsville • Massachusetts

CHARLOTTE, N. C. • GREENSBORO, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.

Special sales agent: H. J. THEILER CORPORATION — Whitinsville, Mass., Spartanburg, S. C.

Hartofix C. P. stops water bleeding !

If you would like to be absolutely sure that *your* fabrics will never be the cause of these little domestic tragedies, always specify selected direct dyeings aftertreated with HARTOFIX C.P.

HARTOFIX C.P. stops water bleeding, prevents perspiration staining, and improves wash resistance of direct dyeings or prints on cellulosic fibers . . . especially tailored for application with resin finishes. And by eliminating the need of expensive fast dyes, HARTOFIX C.P. actually saves you money!

Complete information on all Hart products will be gladly furnished on request.

HART PRODUCTS — BASED ON RESEARCH

the Hart Products Corporation

1440 BROADWAY, NEW YORK 18, N. Y.

Works and Laboratories, Jersey City, N. J.

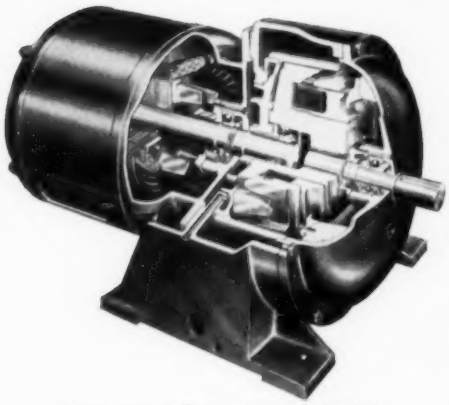
Hart Products Company of Canada, Ltd., Guelph, Ontario

No Commutators, No Rings, No Brushes, No Rotating Coils—in the NEW

EATON

DYNAMATIC®

Adjustable Speed Drives



Dynaspede® Stationary Field Coupling, with Integral Motor

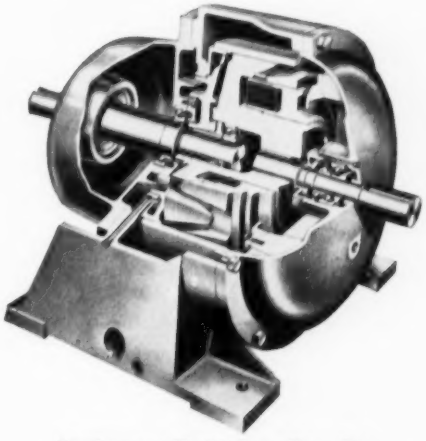
Dynamatic stationary field couplings are the simplest drives so far devised to provide infinitely adjustable speed from an alternating current source. The absence of rotating coils, brushes, slip rings, and commutators in this design holds wear and maintenance to an absolute minimum. Dynamatic electronic or magnetic amplifier controls, in combination with these drives, provide wide latitude in operating functions.

Check these Outstanding Advantages:

Accurate speed control • Wide speed range • Low power losses • Simple construction • Rapid response • Remote control • Quiet, efficient operation • Low maintenance costs

Ajusto-Spede® Drives: Air cooled, stationary field eddy-current couplings mounted integrally with D-flange open drip proof squirrel cage motors are available in capacities from 1 to 75 HP. Units of the same design and capacities are also available without motors.

Dynaspede® Drives: Liquid cooled, stationary field couplings mounted integrally with D-flange squirrel cage motors are available in capacities from 3 to 75 HP. Motor types available are drip proof, splash proof, totally enclosed fan cooled, and explosion proof. The coupling is totally enclosed. Separately mounted couplings are also available in capacities from 3 to 2500 HP and larger.



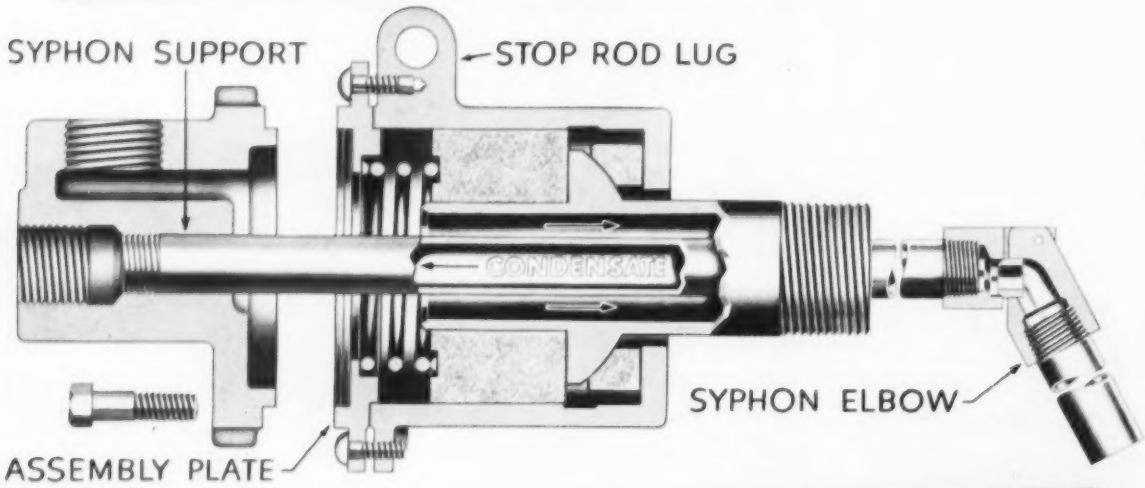
Stationary Field Coupling for use with Separately Mounted Motor

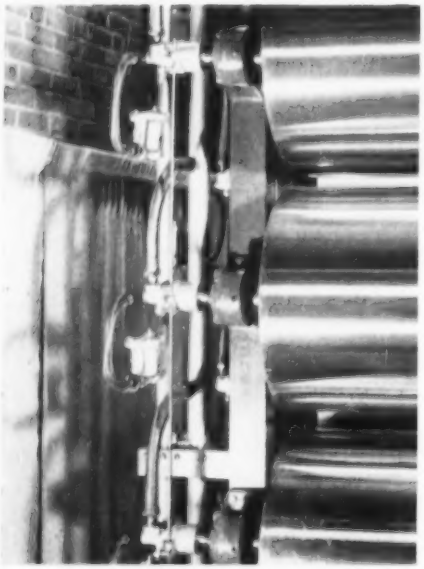
Send for Detailed Information on these New Stationary Field Couplings and Drives

EATON — DYNAMATIC DIVISION — MANUFACTURING COMPANY

3307 FOURTEENTH AVENUE • KENOSHA, WISCONSIN

Made for each other . . . and for dry cans!





Type S-B2P Johnson Joints installed on dry cans in southern mill. Syphon connection in each roll utilizes new Johnson syphon elbow, which ends many troubles of the ordinary curved syphon pipes. Joints are entirely self-supporting, with flexible hose used for connections to permit freedom of movement. Special assembly plate on joints permits ready removal of head to get at spyhon pipe.

Type S-B2P JOHNSON JOINT and JOHNSON SYPHON ELBOW

The syphon elbow at right in the illustration is the newest Johnson development. It permits use of straight pipe for the syphon drainage line, and can be inserted or withdrawn right through the joint.

Perfect team mate for it is the Type S-B2P Johnson Joint. It has a special assembly plate to hold internal parts in position when head and syphon pipe are removed. It is completely packless and self-lubricating, and requires no supports of any kind.

Working together, these two introduce far greater efficiency to the task of getting steam into dry cans, and getting condensate out again. The joint incorporates several design changes that make wearing parts even longer lasting. The Syphon Elbow assures proper location of the Syphon Pipe and permits inspection, in most cases, while the machine is in operation.

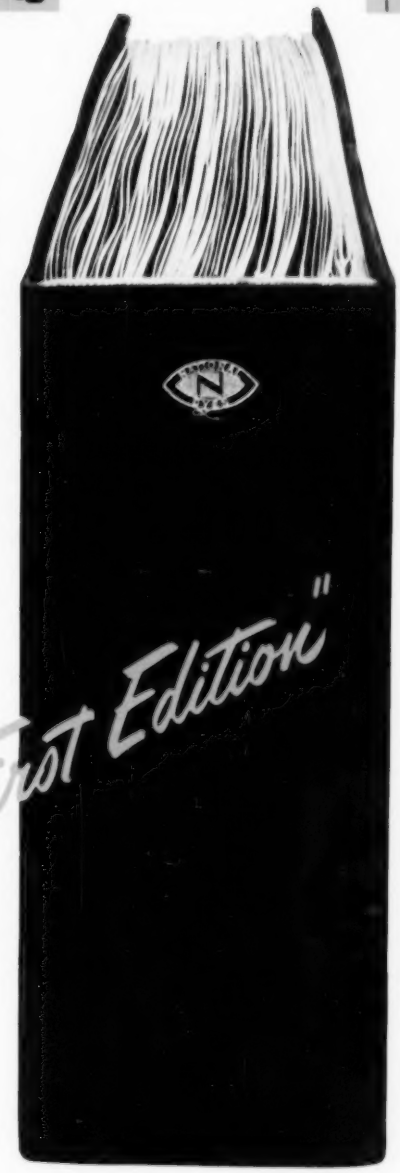
Test it yourself. Thousands of installations have already proved the merit of this new combination. We will gladly furnish a pair of units for 90 day trial in your mill, with no obligation to you.

Why not take us up on this trial offer? Write today for details, and complete literature.

Products of The Johnson Corporation

815 WOOD ST., THREE RIVERS, MICH.

Rotary Pressure Joints • Compressed Air Separaters and Aftercoolers
Direct Operated Solenoid Valves • "Instant" Steam Water Heaters



this priceless "First Edition" is free!

A shade card is a costly reference book that you use every day. It may summarize the results of more than 25,000 individual tests. Often it contains swatches of more hues than many dyehouses do in a year!

If you had to compile the detailed data yourself the cost would be prohibitive. But, fortunately, first-line dye manufacturers provide the needed information as an essential customer service. It's an important part of value-received that never appears on your invoice!

National shade cards are the most complete in the industry, often going beyond AATCC standards to furnish extra detail. Inserts are published to keep them up-to-date. And National shade cards are reliably accurate in evaluating the dyes objectively. You can rely upon them as a guide in your use of National Dyes.

These elaborate shade cards reflect the conviction that our responsibility extends beyond the simple exchange of dyestuffs for dollars! When price-differentials exist, it is often because the low-price supplier delivers less in product and service combined.

To be sure of getting full value every time, it's good business to do business with National.

NATIONAL ANILINE DIVISION

ALLIED CHEMICAL & DYE CORPORATION • 40 RECTOR ST. NEW YORK 6, N. Y.

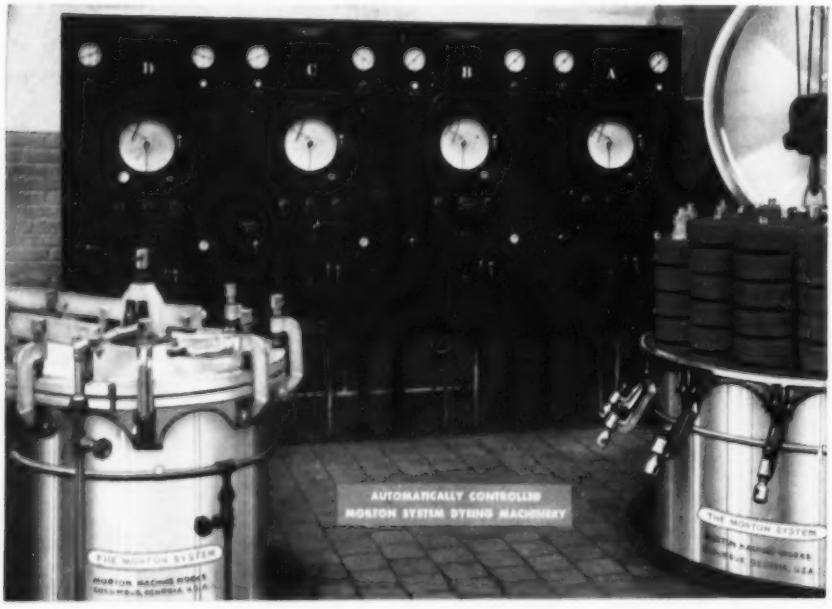
Akron Atlanta Boston Charlotte Chattanooga Chicago Columbus, Ga. Greensboro Los Angeles
New Orleans Philadelphia Portland, Ore. Providence Richmond San Francisco Toronto

THE MORTON SYSTEM...

COMBINATION BEAM AND PACKAGE DYEING AND BLEACHING MACHINE

THE MORTON SYSTEM BALANCED HEAVY DUTY STAINLESS STEEL DYE BEAMS, BUILT FOR QUALITY AND SERVICE.

★ Control: Temperature with Rate of Rise and Records — Directional Flow of Liquid and Time Cycle Records for matching colors with Accuracy — Indicating Lights and Warning Signals — Pressure Gages — Flow Control — Pump Switch — May be operated fully automatic or semi-automatic. —



NOTE: MORTON MASTER DYER WITH AUTOMATIC CONTROLS IN BACKGROUND.

The Master Dyer is not a substitute for technical knowledge or plain "know how". It will not replace the skill or human element, but will be most valuable as a helping friend. We believe them to be worth while in any dye house operation. They are simple to maintain and understand. Let us discuss your operations and then determine the type Automatic Controls that will best suit your production.

Manufactured by:

MORTON MACHINE WORKS, Inc.

COLUMBUS, GEORGIA, U. S. A.

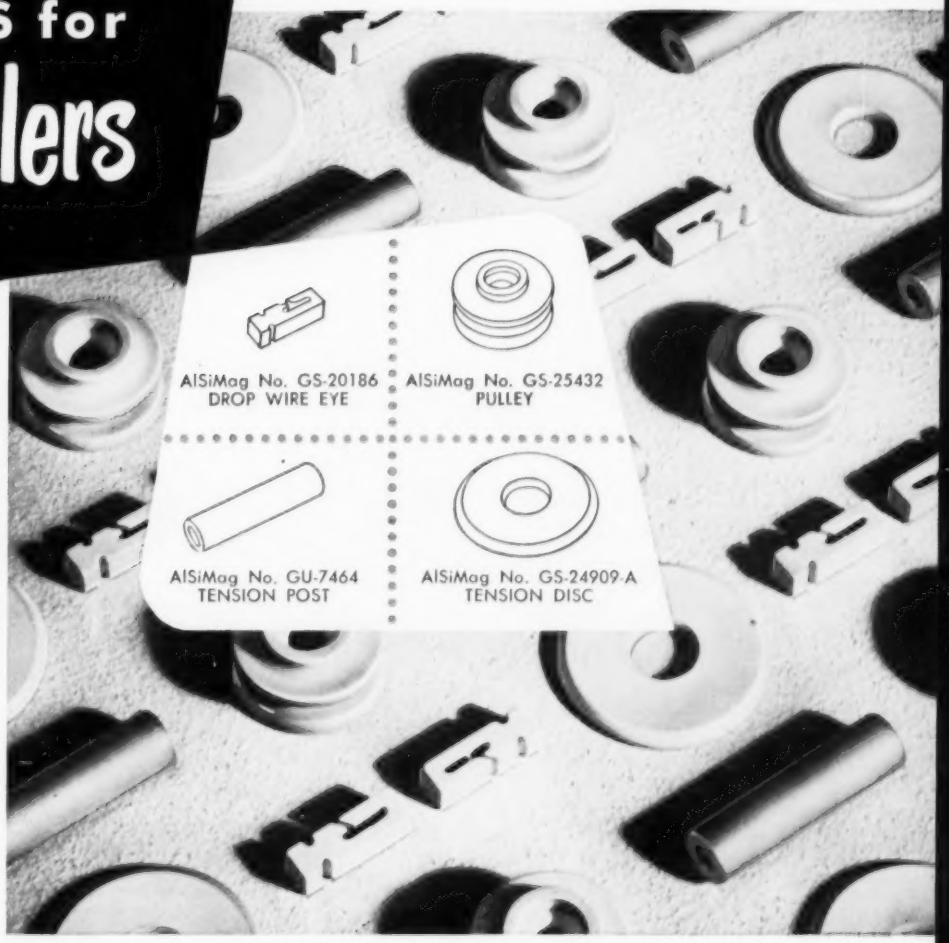
Manufacturers of the MORTON SYSTEM Machinery for Dyeing and Bleaching of:

BEAMS -:- PACKAGES -:- STOCK -:- PIECE -:- TOPS

VALVES — PUMPS — BEAM AND PACKAGE EXTRACTORS AND DRYERS — DYE BEAMS, ALL MAKES AND DESIGNS — DYE TUBES — DYE SPINDLES — TUBE SPACERS — STAINLESS STEEL DYE TUBES CUSTOM BUILT TANKS TO CUSTOMER'S SPECIFICATIONS.

ALSiMAG® GUIDES for Doublers

GIVE YOU: NO POINT OF SUDDEN FAILURE
LONGER LIFE • HIGHER SPEEDS • HIGHER TENSIONS
NO SECONDS DUE TO UNDETECTED GUIDE FAILURE
LOWEST GUIDE COST PER POUND OF YARN PROCESS



These hard, homogeneous AlSiMag guides permit you to run abrasive yarns at high speeds and high tensions. These guides are so hard that wear is very gradual. Since the material is homogeneous it has no surface "skin" to wear through and cause undetected yarn damage.

These AlSiMag guides have been used for many years by mills all over the country. Everywhere that cost figures have been made available to us, these guides have shown far longer life and their cost has been lower per pound of yarn processed.

If your process would be improved by a special guide, we can make it to your specifications.
Test samples of special designs can be made at reasonable cost without tool or die costs.
This enables you to try out your ideas with small investment.

*THESE **AlSiMag** GUIDES FOR DOUBLERS ARE STANDARD ITEMS AVAILABLE FROM STOCK. TEST SAMPLES ON REQUEST.*

Many mills have reported that it would be economically impossible to process synthetic yarns without these AlSiMag guides. Samples for tests will be sent without charge. Try these guides. Keep a record of costs and results. Let your own records tell the story.

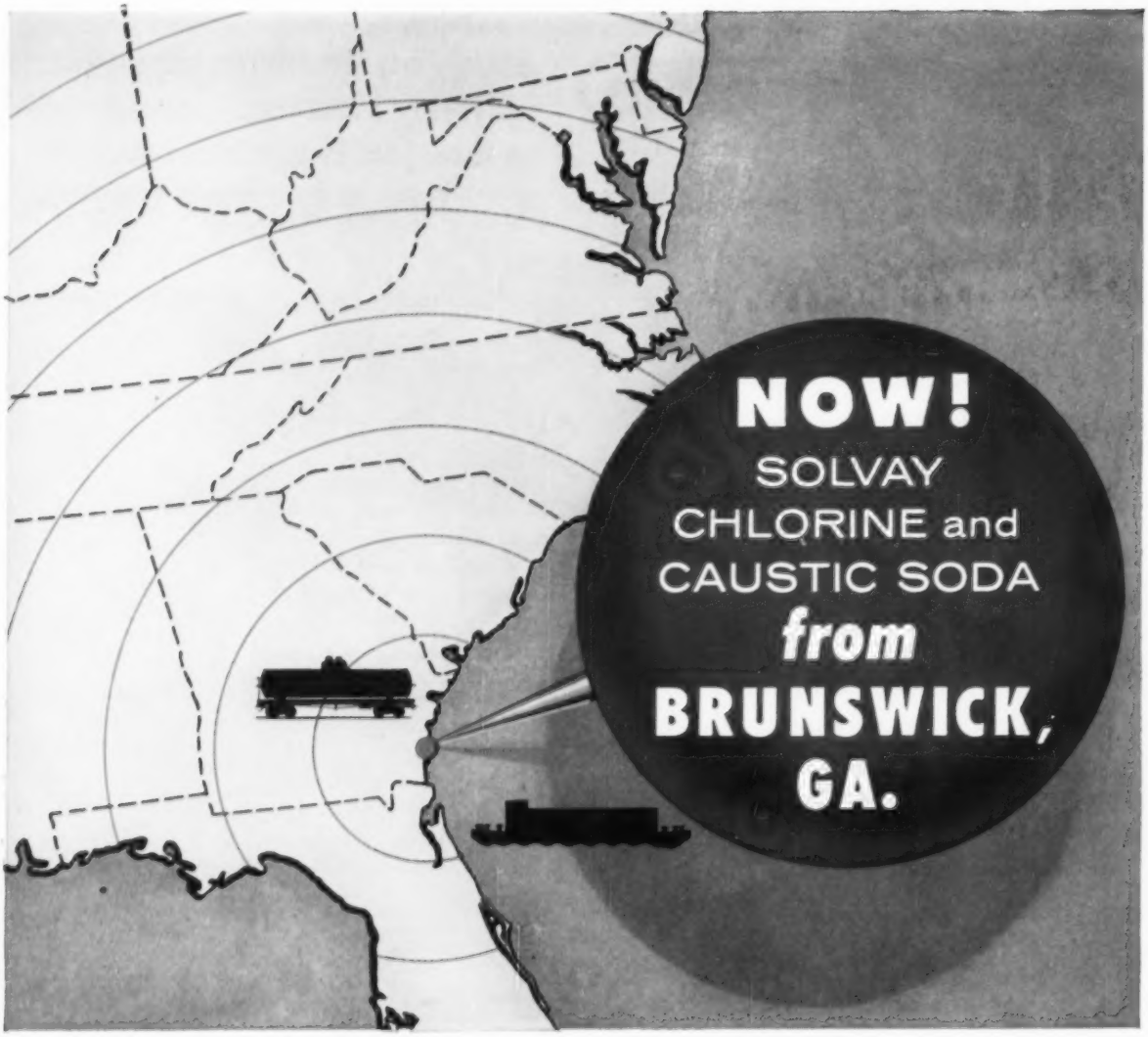
55TH YEAR OF CERAMIC LEADERSHIP

AMERICAN LAVA CORPORATION

A Subsidiary of Minnesota Mining and Manufacturing Company

CHATTANOOGA 5, TENNESSEE

SALES ENGINEERS: Chattanooga, Tenn. • Cranston, R. I. • Dallas, Tex. • Greenville, S. C. • Livingston, N. J. • Los Angeles, Cal. • St. Paul, Minn. • S. San Francisco, Cal. REPRESENTATIVES: CANADA: Ian M. Haldane & Co., P. O. Box 54, London, Ont. ALL OTHER COUNTRIES: Minnesota Mining & Mfg. Co., Internat'l. Div., St. Paul 6, Minn.



Newest Solvay plant means lower costs . . . faster service for Southern users

The addition of Brunswick, Ga. as the newest of SOLVAY's strategically located production centers results in quicker deliveries and lower freight rates for Southeastern chlorine and caustic soda users. Liquid caustic soda will be shipped in tank cars and barges, liquid chlorine in single-unit tank cars. Your nearest SOLVAY branch office will give you information on deliveries from this new SOLVAY source.

Aluminum Chloride • Vinyl Chloride • Sodium Nitrite Potassium Carbonate • Calcium Chloride • Caustic Potash Snowflake® Crystals • Sodium Bicarbonate • Soda Ash Ammonium Chloride • Methylene Chloride • Caustic Soda Monochlorobenzene • Ammonium Bicarbonate • Chlorine Carbon Tetrachloride • Methyl Chloride • Chloroform Cleaning Compounds • Para-dichlorobenzene • Hydrogen Peroxide • Ortho-dichlorobenzene

SOLVAY®

SOLVAY PROCESS DIVISION

Allied Chemical

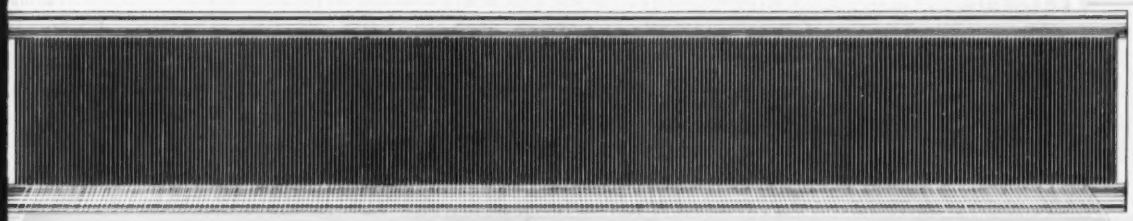
ALLIED CHEMICAL & DYE CORPORATION
61 Broadway, New York 6, N. Y.

BRANCH SALES OFFICES

Boston • Charlotte • Chicago • Cincinnati • Cleveland • Detroit
Houston • New Orleans • New York • Philadelphia • Pittsburgh
St. Louis • Syracuse

Specify Stehedco Quality Reeds

The proof of a good reed is in the woven cloth.



Your reeds play an important part in the economical production of first quality goods. Be sure they are good reeds and you can be more sure of better quality production.

Stehedco Quality Reeds are constructed of the finest materials by master craftsmen. Stehedco plants are located strategically to assure you quick delivery as well as fine quality reeds.

Stehedco engineering brings you four new improvements in reed construction . . . four new reeds that have proved revolutionary in producing better quality with greater economy.

Write today for the new Stehedco Reed Catalog featuring the new Angle Dent Reeds, Loose Spring Reeds, Rigid Metal Reeds and Rigid Pitch Reeds.

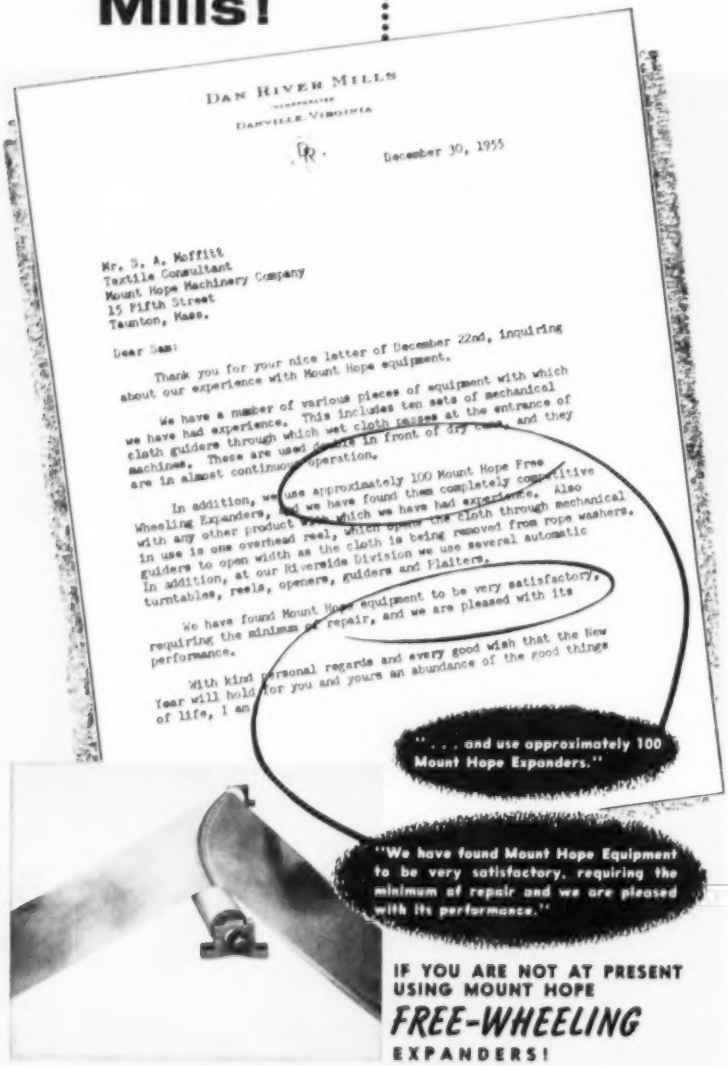
Stehedco
STEEL HEDDLE MFG. CO.
PHILADELPHIA 32, PA.
SOUTHERN SHUTTLE DIV.
GREENVILLE, S.C.
Southern

Other Plants and Offices: Granby, Quebec, Canada—Lawrence, Mass.—Greensboro, N.C.—Atlanta, Ga.—Textile Supply Co., Dallas, Texas—Albert R. Breen, Chicago, Ill.

10-R-56

THANK YOU... Dan River Mills!

We are glad that Mount Hope "Free-Wheeling" Expanders have proven satisfactory!


DAN RIVER MILLS
DANVILLE, VIRGINIA

December 30, 1955

Mr. B. A. Moffitt
Textile Consultant
Mount Hope Machinery Company
15 Fifth Street
Taunton, Mass.

Dear Sam:

Thank you for your nice letter of December 22nd, inquiring about our experience with Mount Hope equipment.

We have a number of various pieces of equipment with which we have had experience. This includes ten sets of mechanical cloth guiders through which wet cloth passes at the entrance of machines. These are used [illegible] in front of dry cans, and they are in almost continuous operation.

In addition, we use approximately 100 Mount Hope Free Wheeling Expanders, and we have found them completely competitive with any other product with which we have had experience. Also in use is one overhead reel, which opens the cloth through mechanical guiders to open width as the cloth is being removed from rope washers. In addition, at our Riverside Division we use several automatic turntables, reels, openers, guiders and Plaiters.

We have found Mount Hope equipment to be very satisfactory, requiring the minimum of repair, and we are pleased with its performance.

With kind personal regards and every good wish that the New Year will hold for you and yours an abundance of the good things of life, I am

". . . and use approximately 100 Mount Hope Expanders."

"We have found Mount Hope Equipment to be very satisfactory, requiring the minimum of repair and we are pleased with its performance."

IF YOU ARE NOT AT PRESENT USING MOUNT HOPE
FREE-WHEELING
EXPANDERS!

. . . to keep fabrics smooth, at full width and without distortion wherever goods are rolled, nipped, dyed, washed, dried or batched — if you want to cut losses, eliminate waste, lower manufacturing costs and increase production.

MOUNT HOPE
MACHINERY COMPANY
56 FIFTH ST., TAUNTON, MASS.

SEND FOR FREE BULLETIN #8244 ON MOUNT HOPE EXPANDERS OR MAKE AN APPOINTMENT WITH A MOUNT HOPE ENGINEER.

Plants at Taunton, Mass. and Charlotte, N. C.

Personal NOTES ABOUT MEN YOU KNOW

(Continued from page 28)

at Slingsby Mfg. Co. Ltd., Brantford, Ont.

The Delta Kappa Phi fraternity has presented honorary memberships to **Edmund Rigby,** vice-president of Berkshire Hathaway, Inc., Providence, R. I.; **H. S. Lamprey,** assistant cashier Union National Bank, Lowell, Mass.; and to **Prof. E. R. Schwarz** of Massachusetts Institute of Technology.

Serving as a district governor of Rotary International, world-wide service club organization, for the 1956-57 fiscal year, is **Joel E. Johnson,** vice-president of the Geneva

Mr. Johnson

(Ala.) Cotton Mills, a partner in the Bama Mills, Geneva, and a director of the Alabama Cotton Manufacturers Association. As governor, he coordinates the activities of 34 Rotary clubs in Alabama.

Now superintendent of Virginia Woolen Co., Winchester, Va., is **Harry E. New.**

Hy Novik was recently elected vice-president of Liberty Fabrics of New York, Inc., manufacturer of elastic nettings and tricot fabrics. Mr. Novik had been general manager.

Aberfoyle Manufacturing Co., Philadelphia, Pa., has elected as a director **Elliott J. Neal,** president of Rex Mills, Inc., Gastonia, N. C., an Aberfoyle subsidiary. He fills the vacancy of the late Kenneth Lord.

Clarence Miller, formerly second hand of winding at Harding Carpet Co. Ltd., Brantford, Ont., is now overseer of finishing.

Recently named comptroller of M. Lowenstein & Sons, New York, was **Everett C. Drake,** succeeding **Erich**

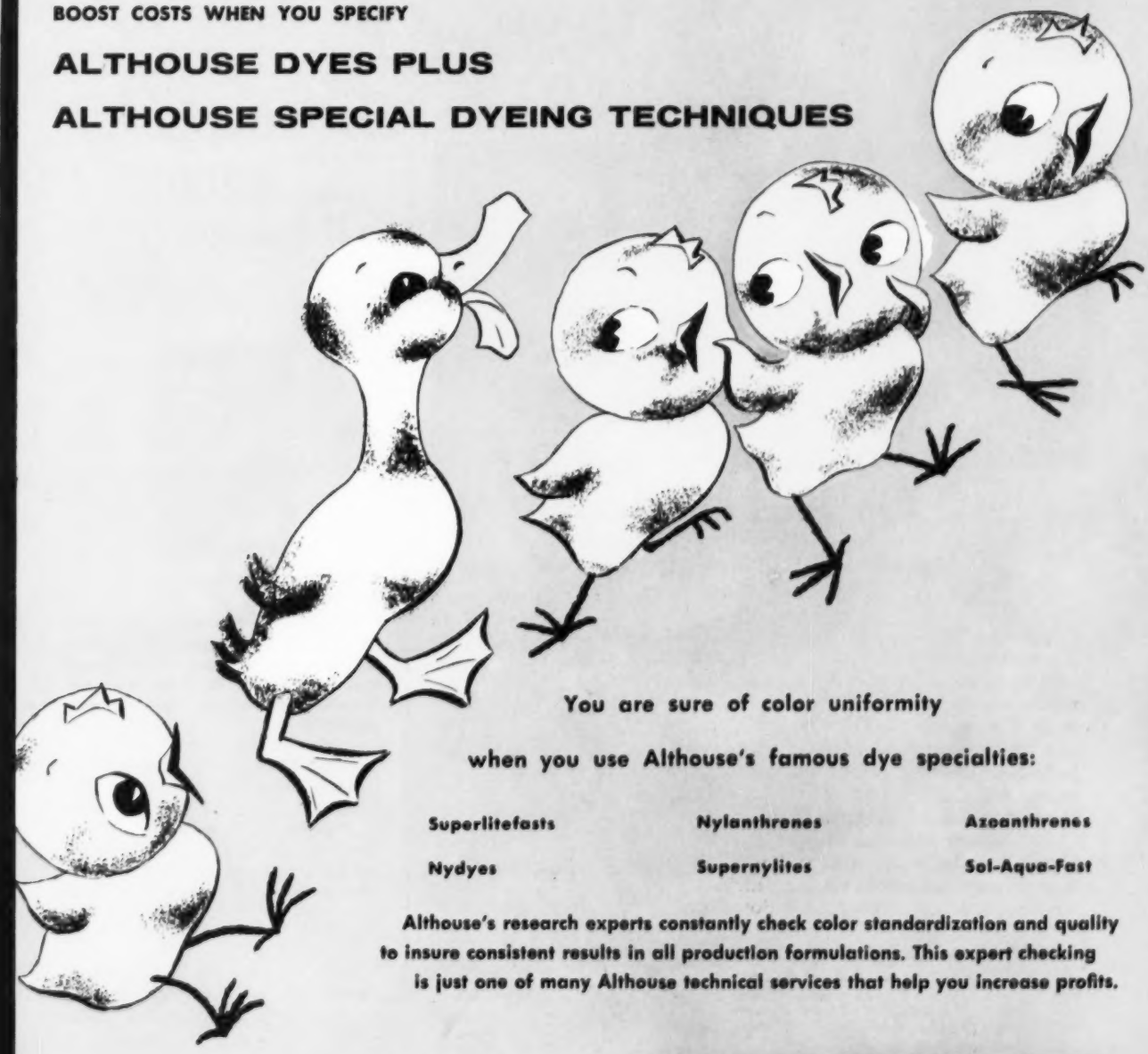
YOU'RE NEVER BEDEVILLED BY THOSE EXASPERATING

UGLY DUCKLING

COLORS THAT MAR UNIFORMITY, DELAY PRODUCTION,

BOOST COSTS WHEN YOU SPECIFY

ALTHOUSE DYES PLUS
ALTHOUSE SPECIAL DYEING TECHNIQUES



You are sure of color uniformity

when you use Althouse's famous dye specialties:

Superlitefasts	**Nylanthrenes**	**Azoanthrenes**
Nydyes	**Supernylites**	**Sol-Aqua-Fast**

Althouse's research experts constantly check color standardization and quality to insure consistent results in all production formulations. This expert checking is just one of many Althouse technical services that help you increase profits.

ALTHOUSE

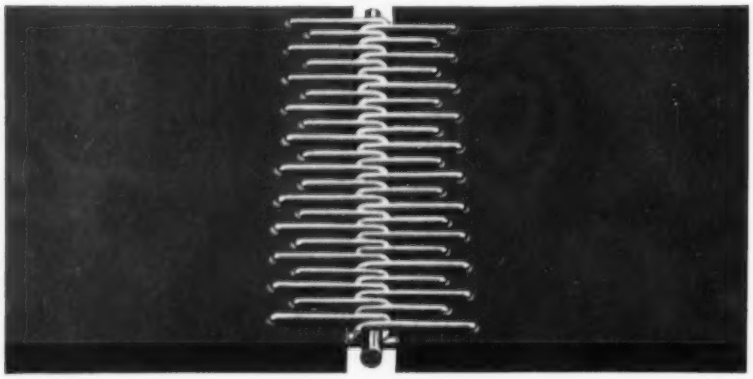
Master Maker of Dyes for Colorfastness

ALTHOUSE CHEMICAL COMPANY • READING, PA.

DIVISION OF CROMPTON & KNOWLES CORPORATION

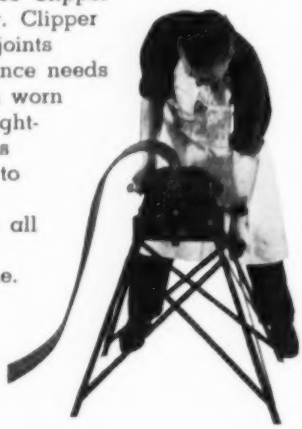
Clipper

HOOKS and LACERS save money 2 ways



Make replacement less frequent — speed replacement when needed

Clipper machine-lacing installs Clipper Belt Hooks under great pressure quickly and easily. Once Clipper belt hooks are inserted, they're in to stay. Clipper machine-laced joints outlast other belt joints several times over — slashing maintenance needs and unproductive downtime. And when worn belts must be replaced or slack belts tightened, the Clipper machine method is faster than other methods. Exerting up to 45,000 pounds pressure, Clipper Belt Lacers lace belts up to 12 inches wide all in one operation, again slashing maintenance time and unproductive downtime.



FOR MORE INFORMATION

Detailed product information and case history examples of Clipper machine-lacing benefits are contained in Bulletin No. 157. Send for your free copy today.

Ask your Industrial Distributor for Clipper Products

Clipper BELT LACER COMPANY

980 Front Ave., N. W. Grand Rapids 2, Michigan

Personal NOTES ABOUT MEN YOU KNOW

W. Katch who has retired. **William H. Suttenfield, Jr.,** who formerly assisted Mr. Drake in a liaison capacity, has been placed in charge of liaison between the firm's merchandising organization and its 18 grey goods mills.

At the Arkray plant of Textiles, Inc., Gastonia, N. C., assistant superintendent, **Frank D. Hedrick,** has retired, having terminated thirty-three years of continuous service with the firm.

Collins & Aikman, New York, N. Y., has named as president **Ellis Leach,** formerly executive vice-president and treasurer of The Timme Corp. Mr. Leach will have his offices in the headquarters of Collins

Mr. Leach

& Aikman at 210 Madison Ave., New York, N. Y. He succeeds **W. F. Bird.** who is now chairman of the board, replacing **Albert R. Jube** who has become chairman of the executive committee.

At E-Z Mills, Inc., Cartersville, Ga., **Dane F. Hahn,** new vice-president in charge of sales, succeeds **Sherman P. Haight, Jr.,** now executive vice-president of the firm. Mr. Hahn had been eastern vice-president of W. L. Stensgaard & Associates of Chicago before assuming his duties at E-Z Mills, Inc.

Wylie L. Hamrick has been promoted from assistant superintendent to superintendent of Alma Mills, Gaffney, S. C.

Promoted from assistant manager of Erwin Mills, Inc., Durham, N. C., plants to assistant vice-president, manufacturing, is **E. G. McIver, Jr.** In his new position, Mr. McIver will assist Marchant C. Cottingham, vice-president, manufacturing, in the su-

(Continued on page 44)

FOR IMPROVED WHITES

DERGOPAL®
fluorescent whitening agents

- *substantive*
- *efficient*
- *economical*
- *liquid - easy to use*

DERGOPAL C

for WOOL, NYLON and ACETATE. Effective for processing top, stock, yarn and piece goods. Produces sharper contrast between white and colored patterns in checks, plaids and tweeds. Eliminates yellow cast of wool and synthetic fibers.

DERGOPAL D

used in the same manner as Dergopal C and for the same fibers and fabrics when a definite BLUE-WHITE is required.

DERGOPAL G

for use under strong acid conditions as in CARBONIZING or ACID FELTING of WOOL.

DERGOPAL B

for COTTON, RAYON and CELLULOSIC MATERIAL as an after-treatment. Also useful in bleaching, often allowing reduction of the amount of bleach in the bath.

DERGOPAL BX

used in the same manner as Dergopal B and for the same fibers and fabrics when a definite BLUE-WHITE is required.

DERGOPAL FP

for special use on COTTON and RAYON in FLAMEPROOFING compounds which tend to yellow the fabric. Applied in same bath. Particularly successful in conjunction with Arko Flameproofing Compound A S.

AC INC

for technical information write:

ARKANSAS CO., INC.

Serving the Textile Industry for over 50 Years

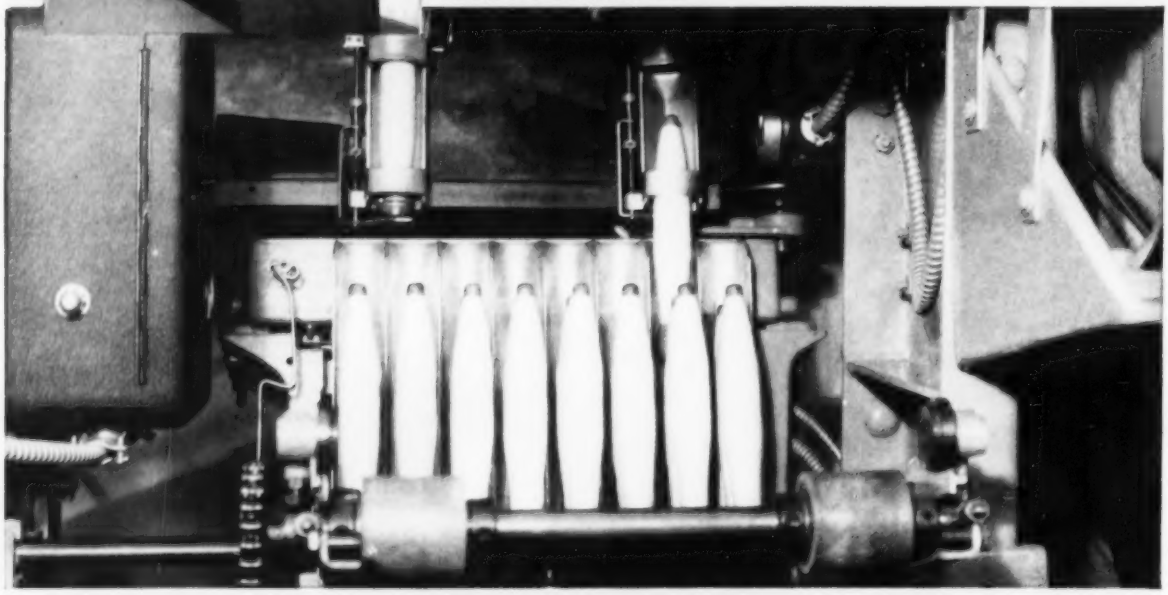
NEWARK, NEW JERSEY

FOSTER-MUSCHAMP Model 66*

Automatic Filling Winder

A NEW HIGH IN WINDING QUALITY
A NEW LOW IN WINDING COSTS

*Manufactured in Westfield, Mass.



Automatic pinboarder serving 8 spindles

ALSO MAXIMUM FLEXIBILITY

The Foster-Muschamp Model 66 offers not only a new high in winding quality and a new low in winding costs, but also MAXIMUM FLEXIBILITY, through independently controlled spindles. Different counts or colors can be run on different spindles (in gangs of 2, 4 or 8) of the same machine at the same time. The machine will also handle equally well all types and counts of yarn from coarse cotton, wool or worsted to the finest counts of filament yarns without the use of extra attachments or complicated adjustments. Since mills are called upon for an ever increasing number of filling styles, this flexibility is of vital importance.

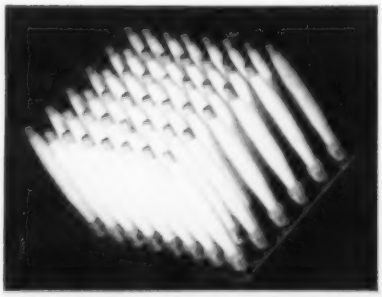
Learn about ALL the advantages of the Model 66 (there are many). Write for Bulletin M-4A.

FOSTER MACHINE COMPANY

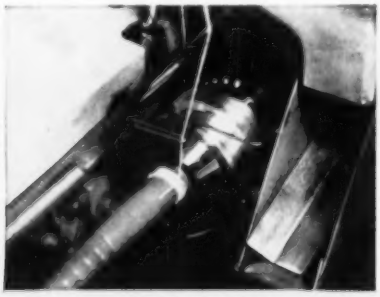
Westfield, Massachusetts, U.S.A.

Southern Office – Johnston Bldg., Charlotte, N. C.

Canadian Representative – Ross Whitehead & Company Limited, 1475 Mountain St., Montreal, Que. and 100 Dixie Plaza, Port Credit, Ont.



Note uniformity and perfection of Model 66 bobbins.



No starting tail on Model 66 bobbins. The tail is secured under first wraps of bunch.

Automatic donning and doffing of bobbins and other features cut winding cost to as low as ¼c per lb.

*largest-selling liquid detergent**
in the textile industry...

NACCONOL® SL

...because it helps ease
the pinch on profits!

When profit margins are tight, production costs must be watched. That's why so many economy-minded textile mills use Nacconol SL.

They have found that Nacconol SL gives more cleaning power per dollar, as compared with most dry products on the basis of active-ingredients.

Liquid Nacconol SL cuts handling time and costs, too. It's cleaner and easier to use. Nacconol SL needs no dissolving. You simply add water to make the required working concentration.

Other popular forms of Nacconol for wet processing include Nacconol DB, Nacconol NR and Nacconol NRSF. Contact the nearest office for prices, samples and technical help.

*Alkyl Aryl Sulfonate

Nacconol

NATIONAL ANILINE DIVISION
ALLIED CHEMICAL & DYE CORPORATION

40 RECTOR STREET, NEW YORK 6, N.Y. • HAnover 2-7300

Akron, Ohio, First Federal Savings Bldg. BLackstone 3-9324
Atlanta, Ga., 1216 Spring St., N.W. TRinity 6-0308
Boston 14, Mass., 150 Causeway St. CApitol 7-0490
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Chicago 54, Ill., The Merchandise Mart MIchigan 2-1000
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Greensboro, N.C., Jefferson Stand. Bldg. GReensboro 2-2518
Los Angeles 58, Cal., 4814 Loma Vista Ave. LOgan 8-2257
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Philadelphia 6, Pa., 200-204 S. Front St. LOmbard 3-6382
Portland 9, Ore., 730 West Burnside St. Beacon 1853
Providence 3, R.I., 15 Westminster St. DExter 1-3000
Richmond 19, Va., 8 North Fifth St. Richmond 2-1930
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Allied Chemical

ATTENTION TO UNIFORMITY . . .

Because even slight variations in ring travelers often cause excessive ends down and poor yarn quality, more and more production-wise mill men have come to depend on the *constant uniformity* of National-Sterling Ring Travelers.

They've learned that National Travelers are carefully made to meet their most exacting standards . . . that each traveler in each box is uniform in weight, dimensions, temper and finish. They've learned, too, that precision balanced, quality-controlled National Travelers consistently deliver more pounds of first class yarn at higher spindle speeds.

Whatever you're running — cottons, wools, synthetics, or blends — it will pay you to let an experienced National-Sterling Engineer recommend the right traveler for your particular spinning or twisting operation. For prompt service, write, wire or phone National Ring Traveler Company and Sterling Division, 354 Pine Street, Pawtucket, R. I. or Southern Office and Warehouse: P. O. Box 112, Gaffney, S. C.

NATIONAL *Sterling*
RING TRAVELERS

NATIONAL RING TRAVELER CO. PAWT. R.I. U.S.A.

F. L. CHASE, JR., Pres. & Treas. L. E. TAYLOR, So. Mgr.

FOR SPINNING AND TWISTING ALL NATURAL AND SYNTHETIC FIBRES

There's a NATIONAL man nearby!

T. H. BALLARD 112 N. 9th St. Belmont, N. C. • **F. S. BEACHAM** P. O. Box 511 Honea Path, S. C. • **H. A. CARTER** 354 Pine St. Pawtucket, R. I. • **D. C. CREECH** P. O. Box 5083 High Pt., N. C. • **H. D. LANIER** P. O. Box 421 Shawmut, Ala.

Export Agent: A. M. ROMERO CORP., 350 Fifth Ave., N. Y. 1, N. Y.

Personal NOTES
ABOUT MEN YOU KNOW

(Continued from page 40)

pervision of all manufacturing operations of the company, including those in Mississippi.

The 1956 Lay Award made by the Alabama Recreation Society was presented to **J. Craig Smith,** president and treasurer of Avondale Mills, Sylacauga, Ala. The award is made annually to a layman who in the opinion of the society has done most in furthering the cause of recreation in the state.

The Quartermaster Research and Development Command, U. S. Army, Natick, Mass., recently presented a special award to **Louis I. Weiner,** textile and fiber specialist of the tex-

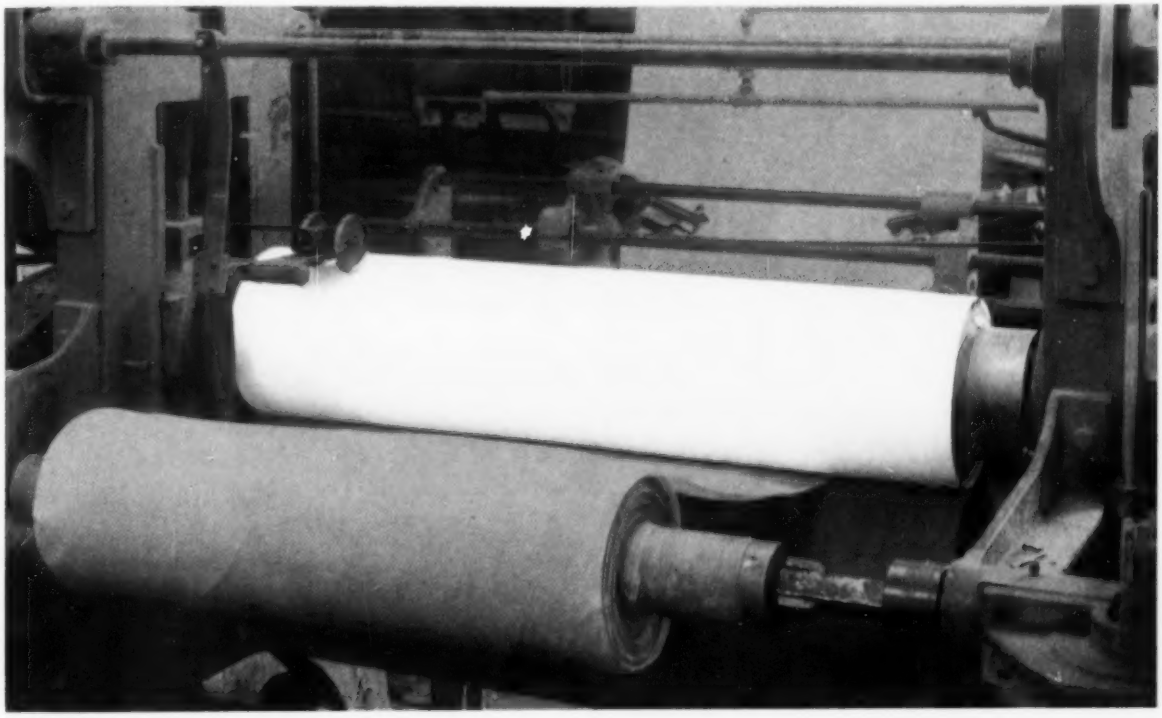
Louis L. Weiner of the QM R&D Center, Natick, receives special award from Col. John D. Martz, Jr., deputy commander. Dr. A. W. Harvey, director of development, is at left.

tile, clothing, and footwear division. The citation read in part as follows: ". . . . . His technical direction of the program which concerns itself with fundamental and applied research studies dealing with the physics, mechanics and engineering of fibrous substances, has been an outstanding example of modern research and development management. . . ."

Dr. Carl M. Conrad, of the Southern Regional Research Laboratory, U. S. Agricultural Research Service, New Orleans, has been elected chair-

(Continued on page 54)

DAYCO FINISHING ROLLS



Padder . . . or special application—"job engineering" gives longer roll life, lower costs

Need a roll for padding fine piece goods? Or a special finishing process in your plant?

Either way you'll get the longest, most satisfactory service possible from Dayco Finishing Rolls. That's because they're "job engineered" . . . built to work under the specific conditions of your operation — whatever they may be.

A typical example is a "job engineered" Dayco Roll which has already given over 9 times the service given by previous rolls. It is being used as a back-up roll on a coating process.

The mill originally tried a special rubber roll covering. Average life of the covering was only sixty days.

The Dayco Roll Engineer, asked for a recommendation, studied the operation. He found that the roll had to be extremely soft with a low compression set and good resiliency. Dayco rubber technicians developed a special compound, a roll was covered and installed.

Now after a year and a half of operation, two shifts a day, five days a week, the Dayco Roll is still giving excellent service, shows no signs of impending failure. Former excessive roll costs have been eliminated. In addition, the mill feels the Dayco Roll has helped control the quality of the cloth by giving a more uniform cushion to the coating drum.

The Dayco Roll Engineer will be glad to help you solve your roll problems. Write or wire him, collect, at The Dayton Rubber Co., Holfast Div., 1486 Lakewood Ave., Atlanta, Ga.

Dayton Rubber

THE DAYTON RUBBER CO., DAYTON 1, OHIO

West Coast Distributor, Tillicum Rubber Co., Lacey, Washington

THE DAYTON RUBBER CO., Holfast Div.
1486 Lakewood Avenue, Atlanta, Georgia

Gentlemen:
Please rush me "All the Money-Saving Facts about the New Dayco Finishing Roll."

Name _____

Position _____

Company _____

Address _____

City _____ **State** _____

Bradford Dyeing Association

desizes with

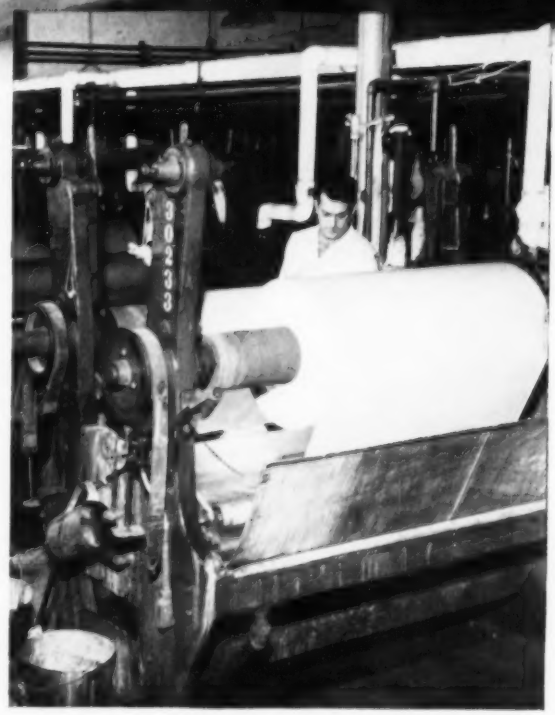
DIASTAFOR

The seal of the Bradford Dyeing Association, Bradford, Rhode Island, is recognized everywhere as assurance of highest quality in textile finishes. To help in a good prepare, Bradford has used Diastafor desizing agent in its processing for more than 35 years.

Not only at Bradford but wherever quality of finish is essential you will most often find Diastafor used in the desizing operation. Fine finishes demand the finest in processing methods and materials.

Diastafor can be used at high desizing temperatures to speed work and save time. Because of its thermostability, Diastafor has a high desizing rate at temperatures up to 180-200° F.

If your specifications call for fine textile finishes, insist on Diastafor desizing agent—used by Bradford Dyeing Association and many leaders in the textile field for speed, economy and uniform results. Diastafor is available in several strengths to meet your individual needs.



▲ Jig Range Operation at Bradford Dyeing Association

A good prepare means *a better finish*

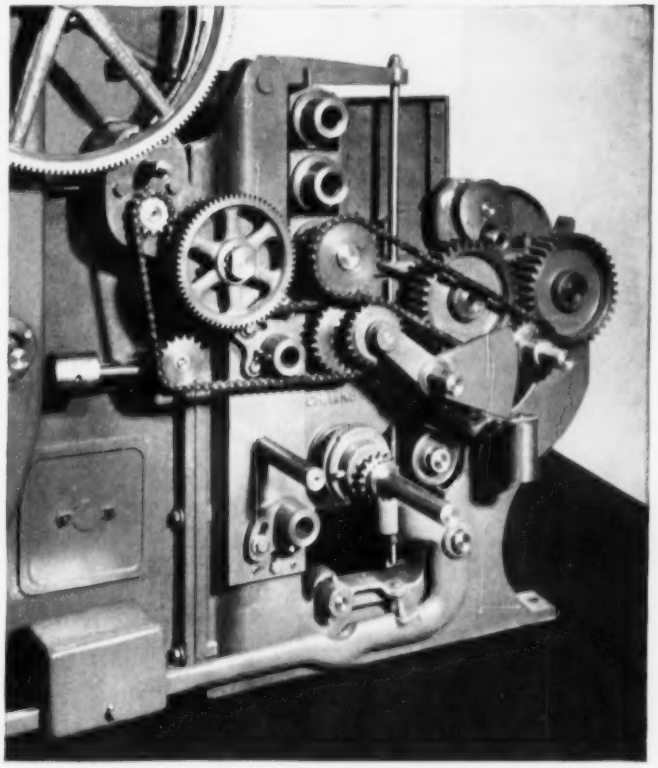
DIASTAFOR®

DESIZING AGENT

STANDARD BRANDS INCORPORATED · DIASTAFOR DEPARTMENT · NEW YORK 22, N. Y.

Need New Pickers?

. . . then, think of what you get in ALDRICH PICKERS!



• The chain drive to the draw-rolls and screens permits better draft control between the screens and the draw-rolls and the draw-rolls and the calender rolls. The old gearing was rather inflexible. The new chain drive is very flexible, and can give much smaller increments of change than were possible with the old drive.

The chain drive to the fluted calender rolls is also highly flexible and permits very accurate maintenance of the desired draft between the vertical rolls and the fluted rolls so that any slack can be kept out of the lap, and firmer more compact laps wound on the lap pin.

This chain drive to the fluted rolls stops those rolls while the picker is being doffed. This prevents injury to the lap by unnecessarily turning it while no cotton is being added. The lap is broken on top of the back fluted calender roll, and remains threaded up under the press roll. This eliminates the heavy place in the lap usually found next to the pin, and it also speeds up the doffing time, because the lap is only two inches from the pin when the picker is started.

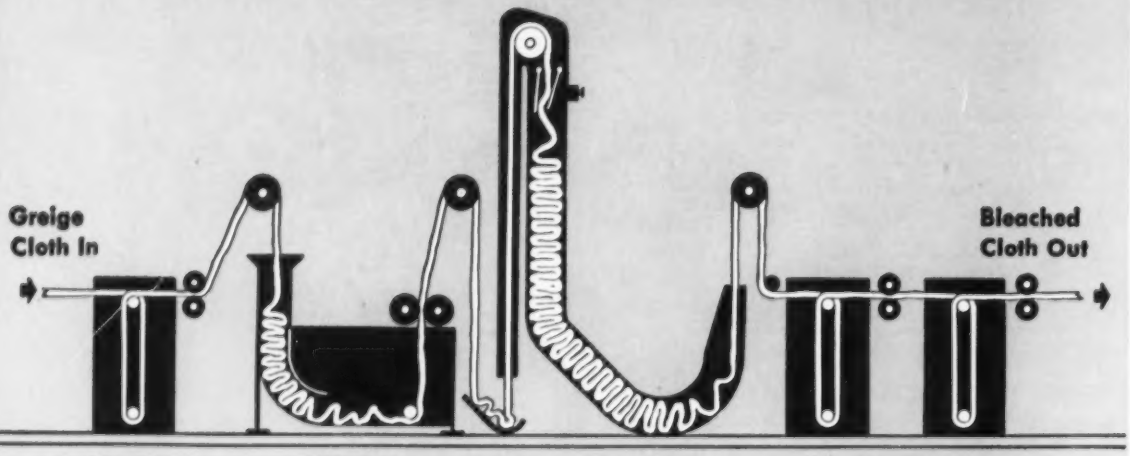
AldricH MachinE WorkS

Greenwood, South Carolina

as others already have

Profit from Du Pont's

THIS IS THE COMPLETE SOLO-MATIC PROCESS



YOUR SOLO-MATIC SERVICE TEAM

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OLympia 4-5121

L. W. Blight
PORTLAND, ORE.
CApitol 7-1281

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INdependence 3-7250

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new SOLO-MATIC Bleaching Program

A new 3-part bleaching program to improve quality and reduce costs

PART I—NEW DU PONT SINGLE-STAGE BLEACHING SYSTEM

Equals multi-stage bleaching effectiveness with 50% less equipment—50% less floor space.

Du Pont's new one-step continuous bleaching process offers mills now operating multi-stage processes these advantages:

—Higher quality, more uniform bleaching of cotton woven goods with half the usual equipment—half the usual floor space; or, *doubled production* from present equipment.

—A more efficient process . . . savings up to 50% in operating costs.

—Reduced over-all bleaching costs with savings up to 20%.

—Greater flexibility—each stage of a multi-stage system can be turned into a complete unit . . . each bleaching a different cloth at maximum efficiency.

PART II—NEW DU PONT J-BOX

Improved quality—fewer moving parts. The simplified construction of this J-Box keeps cloth distortion and abrasion at a minimum. More uniform bleaching—higher, more uniform heat and chemicals used at their maximum efficiency. More economical installations—installation, construction and maintenance costs are far lower.

PART III—NEW DU PONT COMPREHENSIVE SERVICE

At your request, your Du Pont Solo-Matic Service Team is ready to make a complete survey of your operation . . . make detailed, confidential recommendations based on these findings . . . outlining the most economical means of utilizing your present equipment as the basis for the new Solo-Matic Process in your plant.

* * *

To have a Du Pont Representative show you the "Executive Summary," which tells how this step-by-step program works and can be adapted to your requirements, just send the coupon below.

DU PONT

PEROXIDES

ALBONE® hydrogen peroxide, 35% and 50%

PERDOX® sodium borate perhydrate

SOLOZONE® sodium peroxide

Sodium perborate tetrahydrate

DU PONT

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

E. I. du Pont de Nemours & Co. (Inc.)
Electrochemicals Department, TI-2
Wilmington 98, Delaware

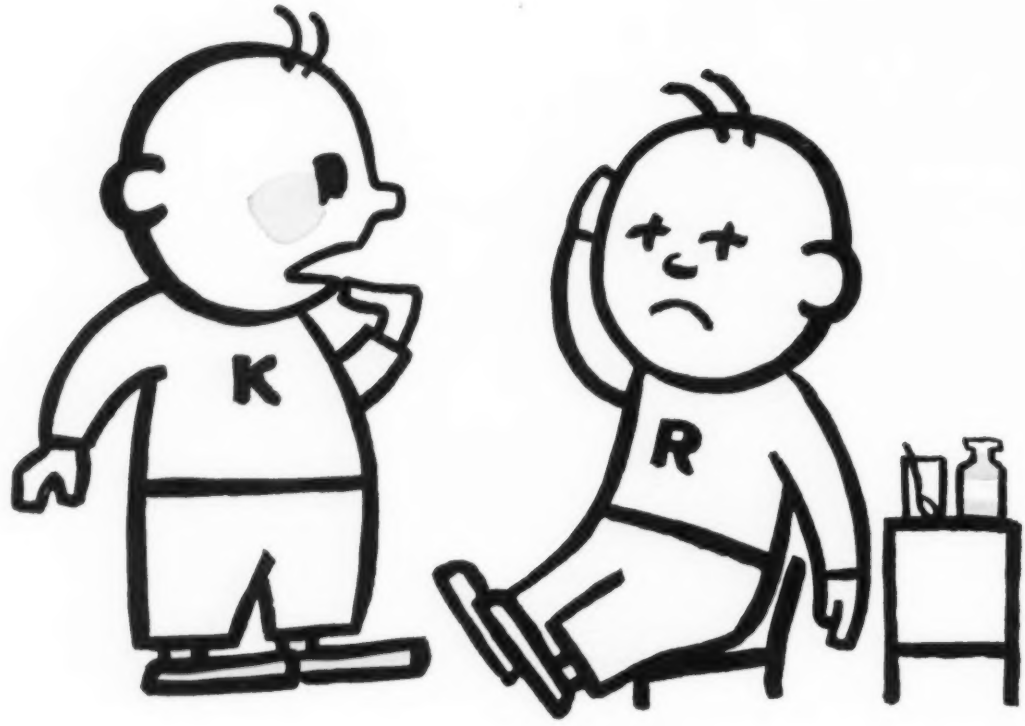
Please have my Representative call with full information on the "Solo-Matic" Bleaching Program.

Name_____ **Title**_____

Firm_____

Address_____

City_____ **Zone**_____ **State**_____



they never go yellow

Gelva KR emulsions for cottons and synthetics do not absorb chlorine, and cellulosics treated with KR's do not yellow or tender with chlorine bleaching.

Gelva KR's are polyvinyl acetate emulsions which meet an extremely wide range of application requirements and offer an excellent choice as to viscosity, particle size, flow characteristics, drying time, film-forming properties, and compounding stability.

Gelva KR's are made and sold only by Shawinigan Resins Corporation. Shawinigan pioneered the production of polyvinyl acetate resins in 1929 and evolved the Gelva KR emulsions in 1944. For continued progress in research, production and application of polyvinyl resins for the textile industry—look to Shawinigan. For full details write Shawinigan Resins Corporation, Department 4202, Springfield 1, Mass.

SALES OFFICES: ATLANTA CHICAGO LOS ANGELES
NEW YORK SAN FRANCISCO

GELVA® KR *emulsions for textiles*

SHAWINIGAN RESINS

No. 1 of a Series
of Improved Draper Repairs
and Mechanisms

LONGER TEMPLE LIFE... LESS MAINTENANCE with NEW #524 TEMPLE

Now available for X and X-2 model looms, the new #524 Temple features a scissors-type Thread Cutter mounted on a Torsional Rubber Bearing. This Thread Cutter requires no lubrication and can be adjusted to cut filling end short after transfer. Its simplified construction greatly reduces wear.

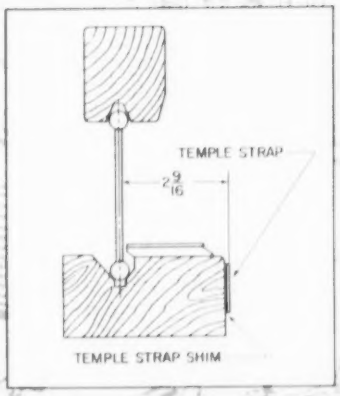
When applying this R.H. Thread Cutter Temple to loom, a distance of 2 9/16" from Reed to front of Temple Strap must be maintained (SEE ILLUSTRATION). Use a new Temple Strap (Formica) and shims, if required, to attain this dimension.

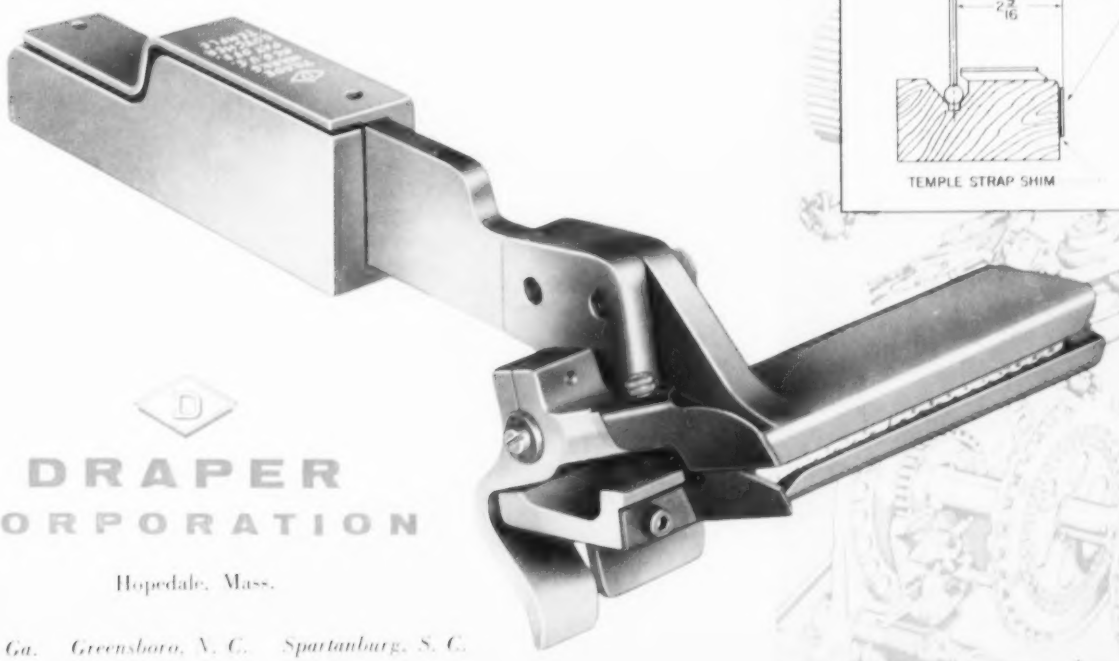
The Temple should be set with cutter away from selvage until after loom is started. When cloth is out to full width, set Temple so that filling ends which are cut after transfer are from 1/16" to 3/32" long.

If the Knife Operating Arm does not return full distance, loosen Thread Cutter Nut and, with Knife Operating Arm clamped to Torsional Bearing, turn bearing shaft counter-clockwise and tighten nut.

When adjusting knives, an even pressure contact for full length of cutting edges should be maintained. *DO NOT set knives any tighter than necessary to cut filling.*

This is another product of Draper Research and Engineering designed to increase operating efficiency of Draper looms.



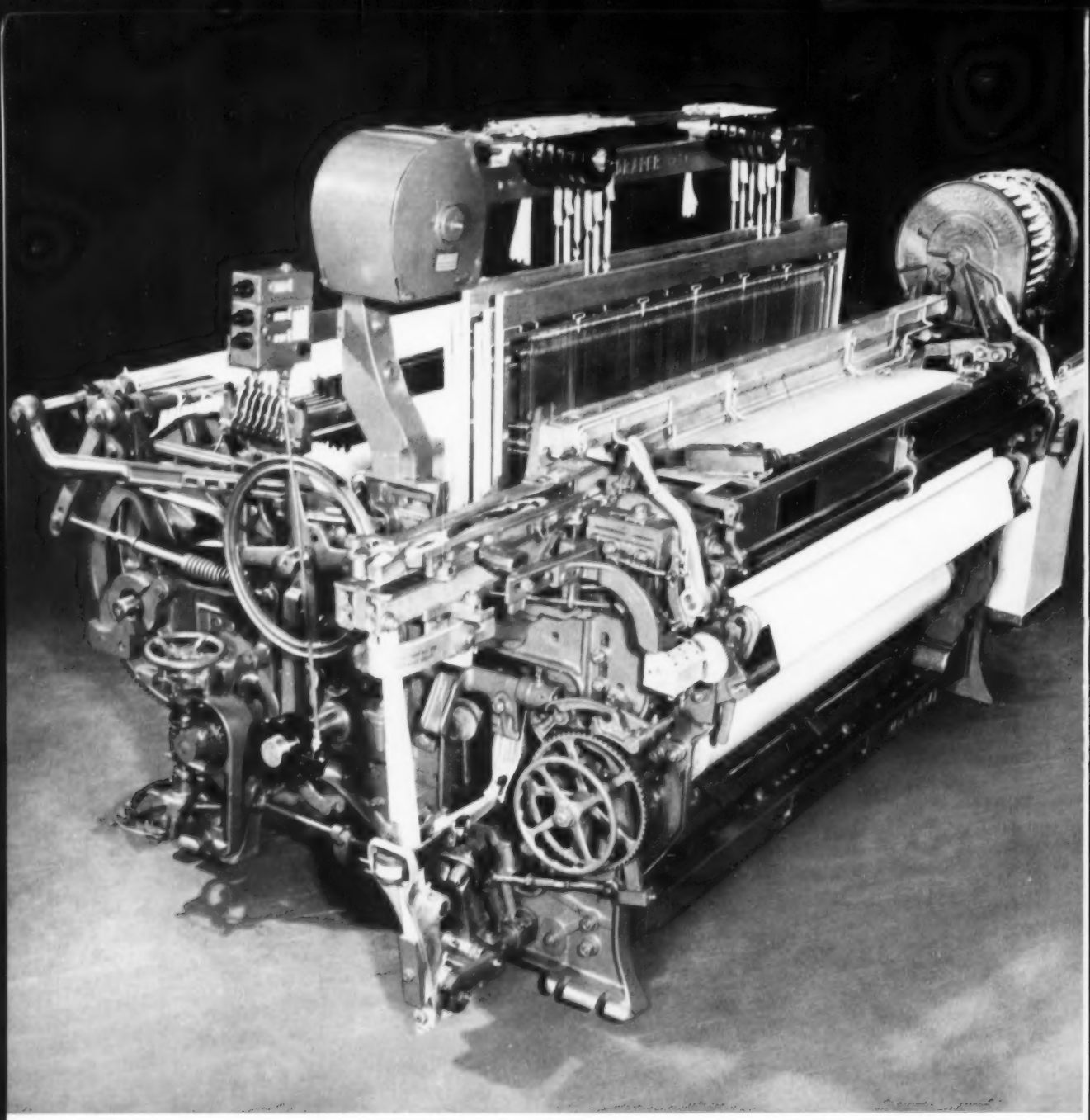


DRAPER CORPORATION

Hopedale, Mass.

Atlanta, Ga. Greensboro, N. C. Spartanburg, S. C.

Please Turn • • ▶ •



This loom gives you all the competitive advantages

Long range flexibility, practical and economical operation, higher production, increased efficiency and a new low in maintenance cost are major benefits offered by the new Draper X-2.

The changing fashions in cotton and synthetics create a need for a loom which can be converted on short notice to weave a wide variety of fabrics.

The X-2 with its ability to weave cottons or synthetics equally well, answers this conversion problem.

The combined advantages of the Draper X-2 mean . . . higher mill profits.

DRAPER
CORPORATION

Hopedale, Mass. *Atlanta, Ga.* *Greensboro, N. C.* *Spartanburg, S. C.*

FIBER-LOK resin emulsions for textiles

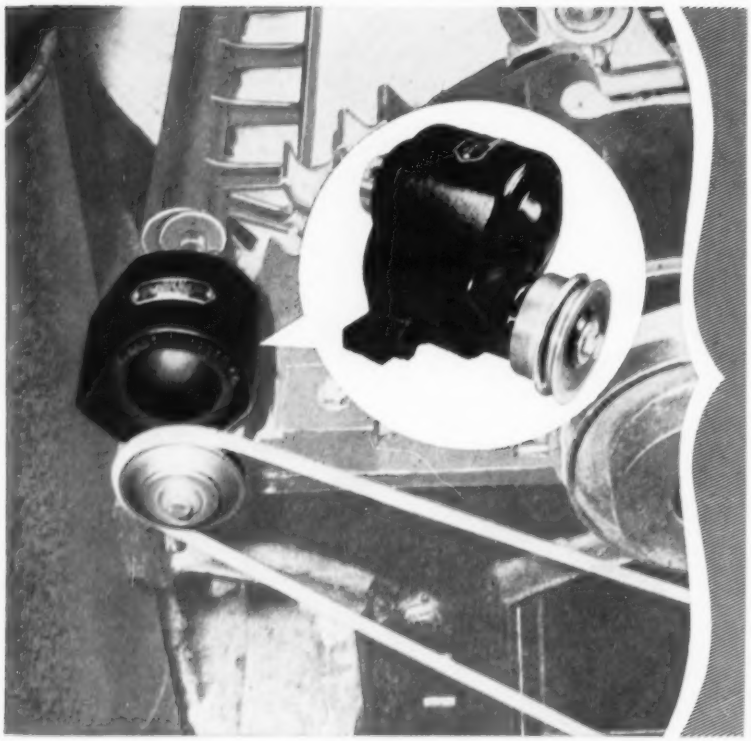
FIBER-LOK emulsions are new vinyls formulated especially for textile applications—from sizing and finishing to nonwoven fabrics.

FIBER-LOK emulsions find use with all types of fibers and fabrics including blends of natural and synthetic. They impart a soft full hand or a crisp stiff finish. They increase tensile strength, abrasion resistance and wash fastness. Some withstand sterilization without discoloring.

FIBER-LOK emulsions are simple to use. Compatible with other sizing and finishing materials. They vary in particle size, emulsifier type and other physical characteristics. Why not let one of National's Resyn Specialists help you decide which can improve your fabrics.

RESYNS® National STARCHES

National Starch Products Inc., 270 Madison Avenue, New York 16, N. Y. • Atlanta • Boston • Philadelphia
In Canada: National Adhesives (Canada) Ltd., Montreal



OUTSTANDING SUPERIORITY OF SOUTHERN STATES COMB BOXES PROVED IN NATION'S MILLS

More than 30,000 Southern States Comb Boxes have been placed in service during the past 7 years—equal to 35% of all the nation's cotton cards. Many mills have changed over 100%.

This overwhelming acceptance proves conclusively that mills can easily justify the small investment. Cardroom overseers quickly recognize the savings that result from their use: no oiling, cleaning or maintenance for the life of the unit; steady, even strokes to drive the comb with perfection; elimination of hot-running, leaky, rattling old-style boxes and their headaches.

Southern States Comb Boxes are furnished complete with an adjuster base for mounting on any make of cotton card. Bases are double tapped to permit rapid mounting on either right or left hand cards. Installation is quick and easy.

Let us show you with facts and figures how it has paid hundreds of mills to install Southern States ball-bearing, sealed-for-life, Comb Boxes; prove how much they will save you in one year. Write direct for a representative to call at your convenience.

SOUTHERN STATES
EQUIPMENT CORP.
HAMPTON, GEORGIA

Personal NOTES ABOUT MEN YOU KNOW

(Continued from page 44)

man of the American Chemical Society's Division of Cellulose Chemistry for 1957. Dr. Conrad, who is head of the laboratory's cotton fiber section, succeeds Reid L. Mitchell of Rayonier, Inc., Shelton, Wash.

Riegel Textile Corp., New York, N. Y., has announced the election of **N. Barnard Murphy** as vice-president for administration, and of **William F. Robertson** as vice-president for textile production. Administrative functions in all manufacturing divisions are now under the supervision of Mr. Murphy, formerly vice-president and general manager of the company's Trion (Ga.) division. Mr. Robertson, formerly vice-president and general manager of the Ware

Mr. Murphy

Mr. Robertson

Shoals (S. C.) division, is in charge of all manufacturing facilities at the Johnston (S. C.), Trion, and Ware Shoals divisions. **Preston H. David** assumes Mr. Murphy's duties as general manager of the Trion division, and **Ralph P. Hardeman** is Mr. Robertson's successor as general manager of Ware Shoals. **Harry A. Turner** has been advanced to assistant general manager at Ware Shoals and **Clyde C. Cobb** to the same position at Trion.

Evans R. Davis has joined the staff of Johnson & Johnson, Limited, Montreal, Quebec, at their new Canadian research center. Prior to his present appointment he was associated with the Code Felt and Knitting Co. Limited, with headquarters at Perth, Ontario.

Under the direction of **Jim Collier,** formerly personnel director of the Greenville (S. C.) Woodside Mills plant, is the industrial relations department, newly established for all Woodside Mills plants. Director of personnel and safety in the new department is **James M. Fuller,** for-

merly Woodside safety director. **A. M. Fraser** has been named Mr. Collier's successor at the Greenville Woodside plant. * * * Promoted from second hand at Liberty to overseer of carding was **Broadus Duncan;** succeeded by **Vernon Mahaffey.** A number of men have been promoted to second hand at Greenville, including **John T. Shelton,** carding; **James Murray,** and **Charles Shepherd,** spinning; **Charles Reeves** and **Robert Byers,** weaving.

Former mill superintendent at Gilt Edge Textile Mills, Inc., New Bedford, Mass., **Peter C. Wayner** has been elevated to general manager, succeeding the late Jacob Diamond.

William K. Wilder has been appointed assistant to S. A. Steere, vice-president of the textile mills division, Goodyear Tire & Rubber Co., Akron, Ohio. Mr. Wilder had been

Mr. Wilder

Mr. Thomas

superintendent at the Decatur, Ala., textile mill. **Raymond R. Thomas** who was assistant superintendent at the Decatur mill has been named acting superintendent.

Burlington Industries Inc., Greensboro, N. C., has announced a number of personnel changes at various locations within the organization: **James D. Barbee,** formerly manager of Cramerton, N. C., operations, has been named vice-president of Cramerton Mills. **James R. Lathan** has been transferred from headquarters in Greensboro, N. C., to the Altavista (Va.) Weaving Co., where he is plant manager. **William S. Manning,** formerly manager of Kingsley Mill, Thomson, Ga., has assumed Mr. Lathan's duties as manager of the filament drapery division including Bristol (Tenn.) Weaving Co.; Radford (Va.) Weaving Co.; and Vinton (Va.) Weaving Co. **Finley W. Stewart,** has been transferred from Altavista Weaving Co. as superintendent to the same post at the Piedmont Heights Plant in Burlington, N. C. * * * **Joseph H. Hamilton,** former sales manager of Burlington Throwing Co., has been

SOUTHERN STATES' NEW COILER LINE HAS ALL ENGINEERING AND DESIGN FEATURES WANTED BY MILL MEN

Name the features you desire most and you will find them on Southern States' vastly improved coilers. To provide mills with a truly premium-quality coiler, every engineering and design feature wanted by mill men has been included.

Here are some of them: available for all can sizes . . . ball bearing throughout—head, shaft, and can table . . . cut tooth gears throughout . . . head and base may be rotated . . . strong tubular steel stand . . . precision-ground calender rolls . . . self-aligning pillow blocks on upright and calender roll shafts . . . fully adjustable can table . . . quickly detached coil spring roll-loading device. Others are fully described in our technical bulletin.

Southern States Coilers are designed for direct attachment to any make of card, left or right hand. Installation is rapid and economical.

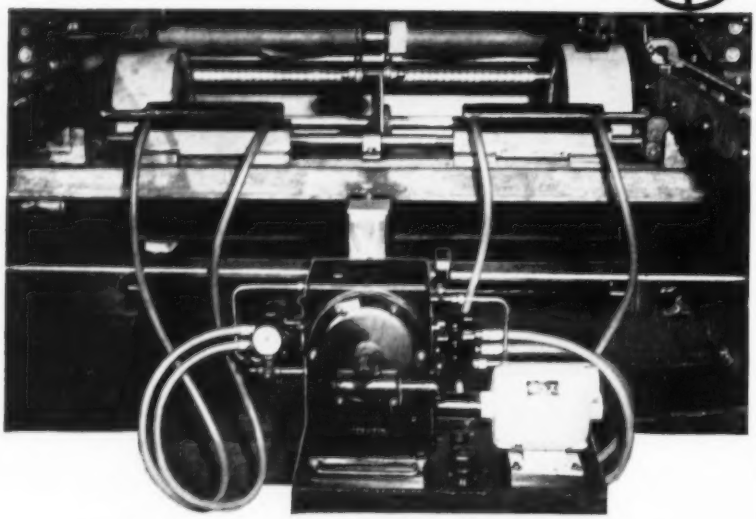
Your mill can profit by this coiler that is quality-built throughout to operate at peak performance, with minimum maintenance, for years.

Get the facts from your Southern States representative or write direct to us for Technical Bulletin 203-a.

SOUTHERN STATES
EQUIPMENT CORP.
HAMPTON, GEORGIA

Askania Regulator Company NEWS

Automatic Cloth Guides for
TENTER FRAMES, LABEL MARKERS, TUBERS and EXAMINERS



PRODUCE MORE AT LOWER COST!
New Askania Application Bulletin Shows HOW

ASKANIA'S NEW REGULATOR APPLICATION BULLETIN NO. 22.1 is now off the press and available to the textile industry. It will be furnished upon request to anyone interested in specific details concerning the application of ASKANIA Automatic Cloth Guides to Tenter Frames of all types ...to Tubing and Examining Machines...to Label Marking Machines. It will explain how the Cloth Guide automatically handles any cloth, including flimsy lace, delicate silks, coarse mesh cloth, synthetics, *without contact with the cloth.*

WELL ILLUSTRATED—You'll find the above illustration showing the Askania Automatic Cloth Guide Control applied to a tentering frame typical of the 11 special photos and drawings used to provide the type of information you need to evaluate your own cloth guide potentials.

IMPORTANT FACTS—*For instance, Bulletin No. 22.1 contains the answer to these questions:*

1. How ASKANIA controls assure clipping, pinning closer to the selvage edge.
2. How the controls can be quickly and easily installed on new or existing machines by any competent mill mechanic.
3. How the operator is freed to examine the cloth.
4. Why the controls react to the flimsiest material with instant speed and powerful force on even the heaviest tenter frames.

MODEL SELECTION—Get full information on ASKANIA Cloth Guide Models and how to select the most economical unit for your own use. For your personal copy, write today to Askania Regulator Co., 260 E. Ontario Street, Chicago, Illinois.

ASKANIA REGULATOR COMPANY
"CONTROLS FOR INDUSTRY"
HYDRAULIC, ELECTRONIC CONTROLS & SERVOS, GENERAL SYSTEMS, ENGINEERING & COMPUTER SERVICE, VALVE ACTUATORS & CYLINDERS

A SUBSIDIARY OF GPE

Personal NOTES
ABOUT MEN YOU KNOW

named manager. **Fred T. Pugh,** formerly with Madison (N. C.) Throwing Co., has been named superintendent of the Hillcrest plant, High Point, N. C.

Phoenix Hosiery Co., Milwaukee, Wisconsin, has elected as vice-president, midwest sales, **John W. Wadsworth;** vice-president, production, **Gardner Friedlander;** and vice-president and secretary-treasurer, **Joseph B. Zwisler,** who assumes duties of the late Thomas G. Turner, secretary-treasurer. The three new officers have also been named to the board.

Jack D. Towery, textile engineer and research principal, Texas Cotton Research Committee and instructor in textile engineering at Texas Tech, has been named to head the newly established fiber research laboratory

Mr. Towery

of Moss-Gordin Lint Cleaner Co., Lubbock, Texas, which has been set up to maintain a controlled system of checking on fiber quality as the result of lint cleaning by the Moss machines.

Cornelius A. Callahan, who was vice-president of S. Stroock & Co., Newburgh, N. Y., is now manager of Seymour (Ind.) Woolen Mills.

At the Superior Mills division of B. V. D. Co., Inc., Piqua, Ohio, **David L. Conrad** is the new general manager, succeeding Dnitri Nicholas.

A. U. (Buck) Priester, Jr., general manager and vice-president, Hillcrest division, Callaway Mills Co., LaGrange, Ga., has been named to the Silver Anniversary All America football team selected by Sports Illustrated magazine, and comprised of football stars of 25 years ago who have gained prominence in professional and community affairs. The story of Mr. Priester, who played

IN ONE WEEK YOU WILL SEE...

THE NEWEST innovations in knitting machinery (in operation)
THE NEWEST in sewing and cutting machinery
THE NEWEST in natural and synthetic yarns for luxurious knitted garments
THE NEWEST in labor saving devices in mill equipment to increase production efficiency
THE NEWEST in point of sale packaging equipment

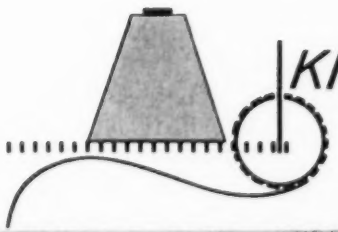
COVER YOUR SUPPLY MARKET

In One Week . . .
In One Place . . .
the 43rd

KNITTING ARTS EXHIBITION

April 29 — May 3, 1957
Atlantic City Auditorium
Atlantic City, N. J.
Sponsored by the 3 great divisions of the knitting industry
NATIONAL ASSOCIATION OF HOSIERY MANUFACTURERS
NATIONAL KNITTED OUTERWEAR ASSOCIATION
UNDERWEAR INSTITUTE

YOU CAN'T AFFORD TO MISS THE 1957
KNITTING ARTS EXHIBITION . . .
to be competitive is to be successful
Get ready to move ahead . . .
ahead of your competition
See the



KNITTING ARTS EXHIBITION

April 29 — May 3 • Atlantic City, N. J.
The largest trade show for knitting executives

FREE ADMISSION TICKETS ARE AVAILABLE BY WRITING TO SHOW MANAGEMENT, KNITTING ARTS EXHIBITION, 332 PARK SQUARE BUILDING, BOSTON, MASS. OR N. Y. OFFICE, 468 FOURTH AVENUE, NEW YORK 16, N. Y.

The SMM ROLLER-BEARING SPINDLE

● Flexibility without the least friction; therefore, no dirtying of oil

● Exclusive oil cushioning. Very gentle and very effective

For Higher *EFFICIENCY* and Greater *ECONOMY*

20,000 Hours and more with same oilfilling.

●

No edge pressure on the rollers. No chafing corrosion.

●

Amazingly smooth running results in less thread breakages, in a more uniform quality of thread . . . permits higher speeds and increased traverse.

o

Minimum Maintenance

●

Minimum power consumption.

●

●

Built for any kind of bobbin. For twisting, spinning and throwing. For light and heavy duty.

●

SMM SPINDLES step up your output-per-manhour and give you highest return on your spindle investment.

Spindles, Motors and Machines Ltd.

Uster, Switzerland

NORTH AMERICAN REPRESENTATIVE
GUBELIN INTERNATIONAL CORPORATION
Mount Kisco — New York

SOUTHERN REPRESENTATIVE
H. PHIL WORTH
Box 1555 ● Greenville, S. C.

Personal NOTES
ABOUT MEN YOU KNOW

football at Clemson College, was told in the issue of Sports Illustrated magazine circulated in December.

Newly-named president of the Greater Charlotte (N. C.) Textile Club is **David R. Johnston,** president of Johnston Manufacturing Co.; first vice-president is **D. E. Hamilton,** president of Comer Machinery Co. and; second vice-president is **L. A. Savage,** works manager of the Kendall Co.

Faculty reallocations at Lowell Technological Institute for the academic year 1956-57 are as follows: From associate to full professor: **Henry E. Thomas** and **Maurice E. Gelinas,** department of textile engineering; from assistant to associate professor: **Russell L. Brown** and **Clarence J. Pope,** department of fibers and yarns; from instructor to assistant professor: **Robert C. Gray** and **Albert T. Woidzik,** department of fabrics; **Elwyn T. Hook** and **Thomas F. McElligott,** department of textile engineering. * * * William C. Menzies, Jr. has been appointed to the post of technical director of the Research Foundation, succeeding **George O. Langlais** who has accepted a position in technical services with Monsanto Chemical Co. Mr. Menzies had been assistant head of the processing and weaving department in the pilot laboratory of Celanese Corp. of America.

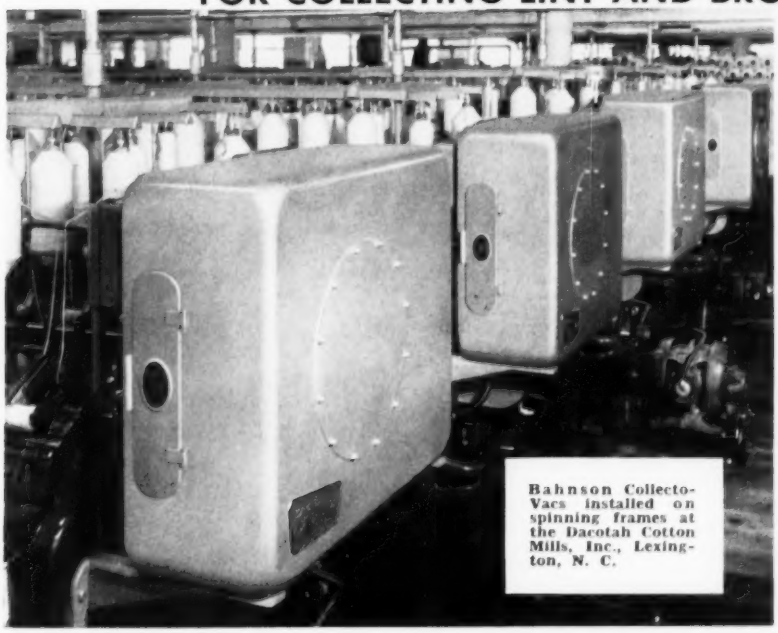
The Narrow Fabrics Institute has chosen as board chairman **Russell J. Neff,** assistant to the president of Phoenix Trimming Co., Chicago. Other elected officers include: president, **Carlton H. Stauffer,** president of York Narrow Fabrics Co.; vice-president, **John A. DeAngelis,** president Murdock Webbing Co.; treasurer, **E. B. Laughlin,** president, Laughlin Textile Mills, Inc.; and secretary, **Thomas R. Beecher,** president, Globe Woven Belting Co.

Berkshire Hathaway, Inc., Providence, R. I., has announced management changes as follows: **Malcolm G. Chace, Jr.,** formerly president and treasurer, continues as president, but **Edmund Rigby** formerly assistant treasurer of Hathaway Manufacturing Co., is now treasurer. **Linsley V. Dodge** has been appointed vice-president in charge of all sales, succeed-

(Continued on page 246)

new Bahnson Collecto-Vac

FOR COLLECTING LINT AND BROKEN ENDS



Bahnson Collecto-Vacs installed on spinning frames at the Dacotah Cotton Mills, Inc., Lexington, N. C.

Top textile firms find greater performance advantages with the efficient Bahnson Collecto-Vac

Bahnson Collecto-Vac

Mill-proved Collecto-Vac features offer you more for your investment as standard equipment

IN MATERIALS: Attractive anodized aluminum flutes — *no warpage or cracking.* Rugged 14 gauge stamped steel collection box.

IN DESIGN: More uniform suction pressure. Scroll type fan discharge to *disperse* motor alley heat, not *concentrate* it.

Belt driven fan for flexibility, or internal motor for economy. (A scroll type fan is used with both designs.)

IN PERFORMANCE: Greater cleanliness and collection of flying lint. Positive end collection the length of the frame. Lower horsepower at same CFM and suction pressure.

A PARTIAL LIST OF USERS

M. LOWENSTEIN & SONS, INC.
GRANITEVILLE MILLS
WALTON COTTON MILLS
NEW BRAUNFELS TEXTILE MILLS
BIBB MANUFACTURING COMPANY
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JOANNA COTTON MILLS COMPANY
CLIFTON MANUFACTURING COMPANY
DACOTAH COTTON MILLS, INC.
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BURLINGTON INDUSTRIES, INC.
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FREE BULLETIN

Write us today for our free booklet containing detailed information on the new Bahnson Collecto-Vac.

Bahnson COMPANY
WINSTON-SALEM, N. C.

AIR CONDITIONING / CLEANING
VACUUM COLLECTION

91 of the top 100

Of the nation's 100 top textile manufacturing firms, 91 are users of Bahnson equipment!

1957...the year for
Leaders in every phase of the

MR. E. T. BARWICK,

"Nylon carpeting can not only be made to look and feel luxurious, but at the same time it performs admirably in terms of rugged wear. We predict a big year in nylon for 1957."

MR. LOUIS R. PUTZEL,
Renard Linoleum and Rug Company

"From our own experience in nylon carpeting, we see every indication that it is headed for a very big future... a future built on true performance and value for the ultimate consumer."

THE NEW Nylon Staple

NYLON in carpeting!

carpeting industry agree on nylon

MR. CHARLES A. KARAGHEUSIAN,

"If properly used, the known properties of nylon and the many values it offers the consumer should insure its growth in the manufacture of carpets and rugs."

MR. C. EUGENE STEPHENSON, A.I.D.
Internationally famous decorator

" 'Successful interiors' means not only 'beautiful interiors' but also those that *stay* that way. Nylon carpeting has a way of providing a permanence of beauty that appeals to all practical designers today."

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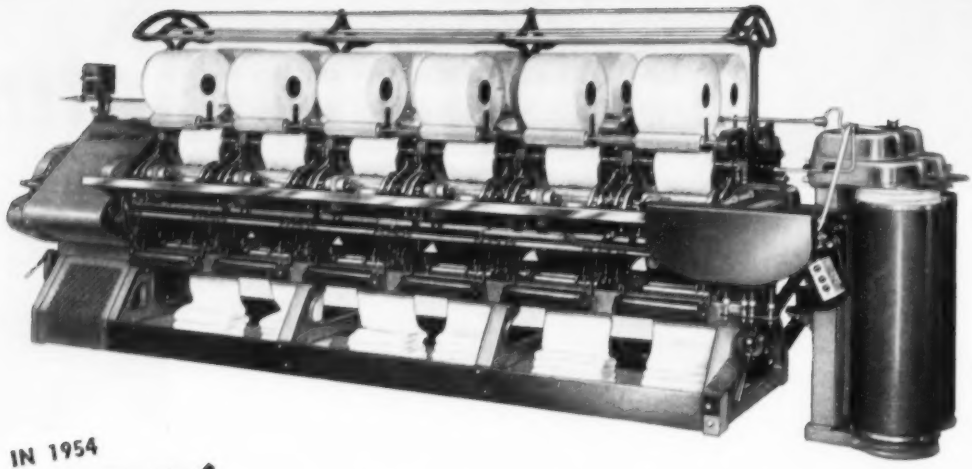
INDUSTRIAL RAYON CORPORATION,
Sales Offices: 500 Fifth Avenue, New York 36, N. Y. • 627 Guilford Building, Greensboro, N. C.



IN 1954

78% of all the combed yarn produced in the U.S. was processed on SACO-LOWELL COMBERS

TOTAL U. S. PRODUCTION
553,522,000 LBS.

PURCHASERS OF SACO-LOWELL MODEL 56 COMBERS IN 1956

American Thread Co.
Bager & Crawford Spinning Co.
Brower Mills, Inc.
Burlington Industries, Inc.
Cannon Mills
Cross Cotton Mills Co.
Dan River Mills, Inc.
Dara Mill Co.
Dover Mills Co.
Drayton Mills
Glendale Spinning Mills, Ltd.
Graniteville Co.
Greenwood Mills
Institute of Tex. Tech.
Marion Mfg. Co.
Morgan Cotton Mills, Inc.
New Braunfels Textile Mills
Oakboro Cotton Mills
Orr Mills
Parkdale Mills
Pepperell Mfg. Co.
Russell Mfg. Co.
South Fork Mfg. Co.
Springs Cotton Mills
J. P. Stevens & Co., Inc.
Thomaston Mills
Wiscassett Mills Co.
Woodside Cotton Mills
Plus 27 Mills in foreign countries

QUALITY SEEKING MILLS HAVE SELECTED SACO-LOWELL COMBERS FOR THESE AND MANY OTHER GOOD REASONS—

1. Superior quality and evenness of sliver.
2. Precise control of noil removal from 6% to 25%.
3. Consistently high combing and detaching efficiency.
4. Higher production per man hour.
5. High operating efficiency, generally well over 90%.
6. Highest production per square foot of floor space and per horse power.

More than 380 Saco-Lowell Model 56 Combers were purchased in 1956 . . . by mills here and abroad.

With Saco-Lowell Model 56 Combers, your mill can profit from production as high as 55 lbs. per hour with $1\frac{5}{16}$" American Cotton, with a detaching efficiency 2% better than any other comber.

Contact your nearest Saco-Lowell sales office for complete details or arrangements for a demonstration.

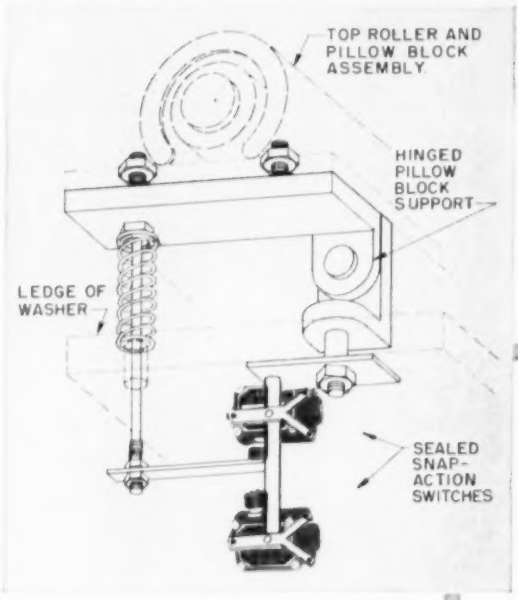
*Source of data
U. S. Department of Commerce
1954 Census of Manufactures June 1956

SACO-LOWELL SHOPS

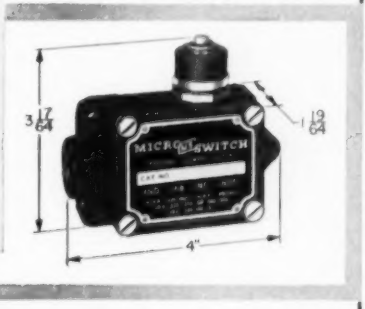
60 BATTERYMARCH STREET, BOSTON 10, MASS.

Shops at BIDDEFORD and SACO, MAINE, and SANFORD, N.C. Sales Offices: CHARLOTTE · GREENSBORO · GREENVILLE · ATLANTA

MICRO SWITCH . . . FIRST IN PRECISION SWITCHING



The switches used in this application are "F" series enclosed high capacity switches. An elastomer boot on the plunger prevents entrance of moisture or dirt. A gasket seal is located between the housing and cover plate.



How Textile Manufacturer uses MICRO SWITCH Precision Switches to prevent "thread-outs" and "lap-outs"

Here is an example of the use of two MICRO SWITCH precision switches to control a tension-actuated stop motion. This device is installed on continuous process bleaching and dyeing machinery to prevent time consuming "thread-outs" and roller bending "lap-outs."

A stop motion is mounted on one of the top idler rollers in such a way as to use extremes in cloth tension as a means of actuation. Two MICRO SWITCH sealed precision switches are so positioned as to be actuated by changes in cloth tension.

Release of the cloth tension, such as occurs in a breakout, allows the springs to return to their original position and brings the actuating arm up against the top switch. Actuation of the switch stops the machine quickly through dynamic braking. Excessive cloth tension, such as occurs in a "lap-out," causes full compression of the springs and actuates the bottom switch. This also stops the machine before bending tensions develop.

For complete information on switches for textile equipment, contact the MICRO SWITCH distributor nearest you. Field engineering service is also available at MICRO SWITCH branch offices.

Look under "Switches, Electric," in the Yellow Pages.

Mill operators have found hundreds of other important uses for MICRO SWITCH precision switches

- as trumpet stops on combing heads
- as carriage movement controls
- to prevent needle breakage
- to stop bobbin winding when bobbin fills
- as thread breakage detectors
- to control cloth position as web unrolls
- to position clamps on cloth stretching machine
- as thread run-out detector on loom shuttles
- to automatically eject unfilled quills
- to stop motor when gear box is opened
- to control tension on cloth measuring machine
- as selvedge build-up control
- as fabric thickness detectors
- and many other textile applications

Send for Catalog 83
"Industrial Enclosed Switches"

MICRO SWITCH
A DIVISION OF MINNEAPOLIS-HONEYWELL REGULATOR COMPANY
In Canada, Leaside, Toronto 17, Ontario • FREEPORT, ILLINOIS

THEY FIND A NEW MARKET ...BY PACKAGING

Packaging has opened up a new market for this towel manufacturer—the gift market. Merchandising a set of terrycloth place mats, towel, and apron together in a display carton, he presents Kitchen Terries as a bright and attractive gift. In a sturdy, eye-catching Framevue folding carton, overwrapped with transparent plastic film, protected from shop wear, the terries are displayed perfectly, and practically sell themselves.

MORE PROFITS THROUGH PROGRESS IN PACKAGING

CONTAINER CORPORATION OF AMERICA

38 South Dearborn Street, Chicago 3, Illinois, and 42 other cities

Corrugated and solid fibre shipping containers, folding cartons, flexible packaging, fibre cans

On the Spot Personal Attention

. . . right in your own mill!

Problems in your Card Room? Ask a TUFFER Sales Engineer to visit your mill and give you assistance in working out a solution. You'll get logical, workable suggestions and recommendations that mean increased production, improved quality, less down time. Your inquiry involves no obligation.

Tuffer TRADE MARK

CARD CLOTHING

Manufacturers of Card Clothing since 1866

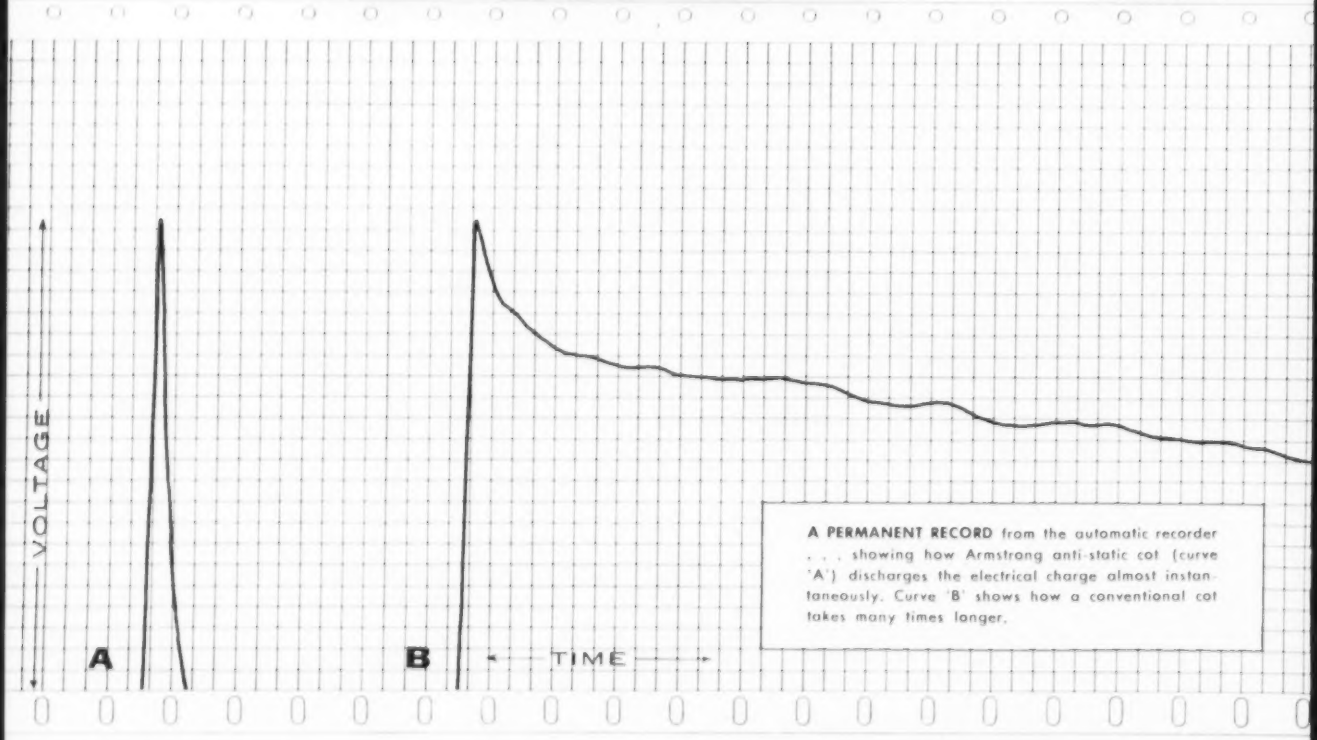
HOWARD BROS.

WORCESTER 8, MASSACHUSETTS

Southern Plants: Atlanta, Ga., and Gastonia, N. C.

Direct Representation in Canada

TUFFER PRODUCTS Card Clothing for Woolen, Worsted, Cotton, Asbestos and Silk Cards • Napper Clothing and Brushes • Top Flats re-covered and extra sets loaned at all Plants • Lickerins rewired at Southern Plants • Hand Stripping Cards



A PERMANENT RECORD from the automatic recorder . . . showing how Armstrong anti-static cot (curve 'A') discharges the electrical charge almost instantaneously. Curve 'B' shows how a conventional cot takes many times longer.

AN ELECTRICAL CHARGE is stored in a condenser by connecting its terminals briefly to a six-volt battery. The cot is placed on needle-point contacts to which the condenser is wired . . . providing a path for the electricity. A sensitive recorder automatically records the rate of discharge.

new Armstrong anti-static cots help

PREVENT LAPPING, REDUCE WASTE

If you are having trouble with front roll laps and excessive clearer waste caused by static, you'll be interested in the dramatic laboratory test shown here.

This test measures the rate at which the new Armstrong anti-static cots carry off an electrical charge. It has been proved that this accurately indicates the ability of the cots to discharge static electricity.

As mill men know, static is becoming an increasingly serious problem. The reason is the growing use of synthetic yarns, the trend toward non-metallic cap bars, and the elimination of other metal-to-metal contacts in modern frames.

Armstrong anti-static cots help to eliminate lapping conditions caused by static because they contain certain ingredients which enable the cot to carry off static charges continuously. This prevents such charges from accumulating on the yarn or cots to the point where they can cause trouble.

Extensive mill installations of these new compounds indicate that they practically eliminate lapping caused by static. In many cases, they also significantly reduce waste.

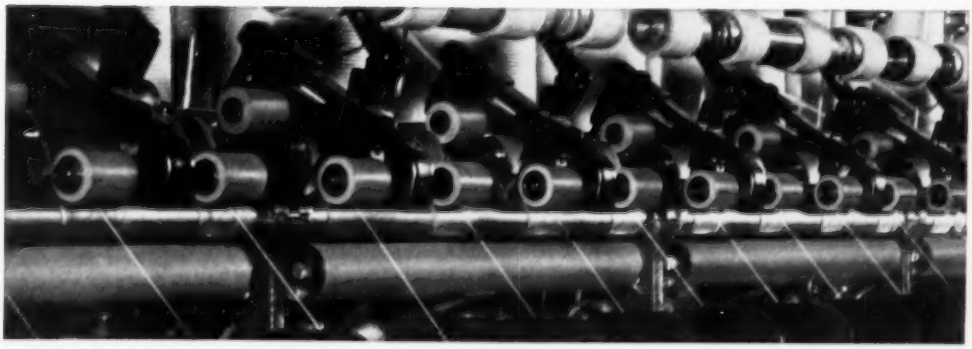
Like all Armstrong Accotex® Cots, these new roll coverings will give years of service. Rebuffing (rarely necessary more than once a year) doesn't impair their built-in anti-static properties.

Together with Accotex J-490 Cots, the new Armstrong anti-static materials form a complete group of cots which will control lapping on spinning and cardroom frames. Where high static aggravates the lapping problem, these two new compounds are recommended: Accotex NC-762 for frames with flat clearers and Accotex NO-764 for frames equipped with revolving clearers.

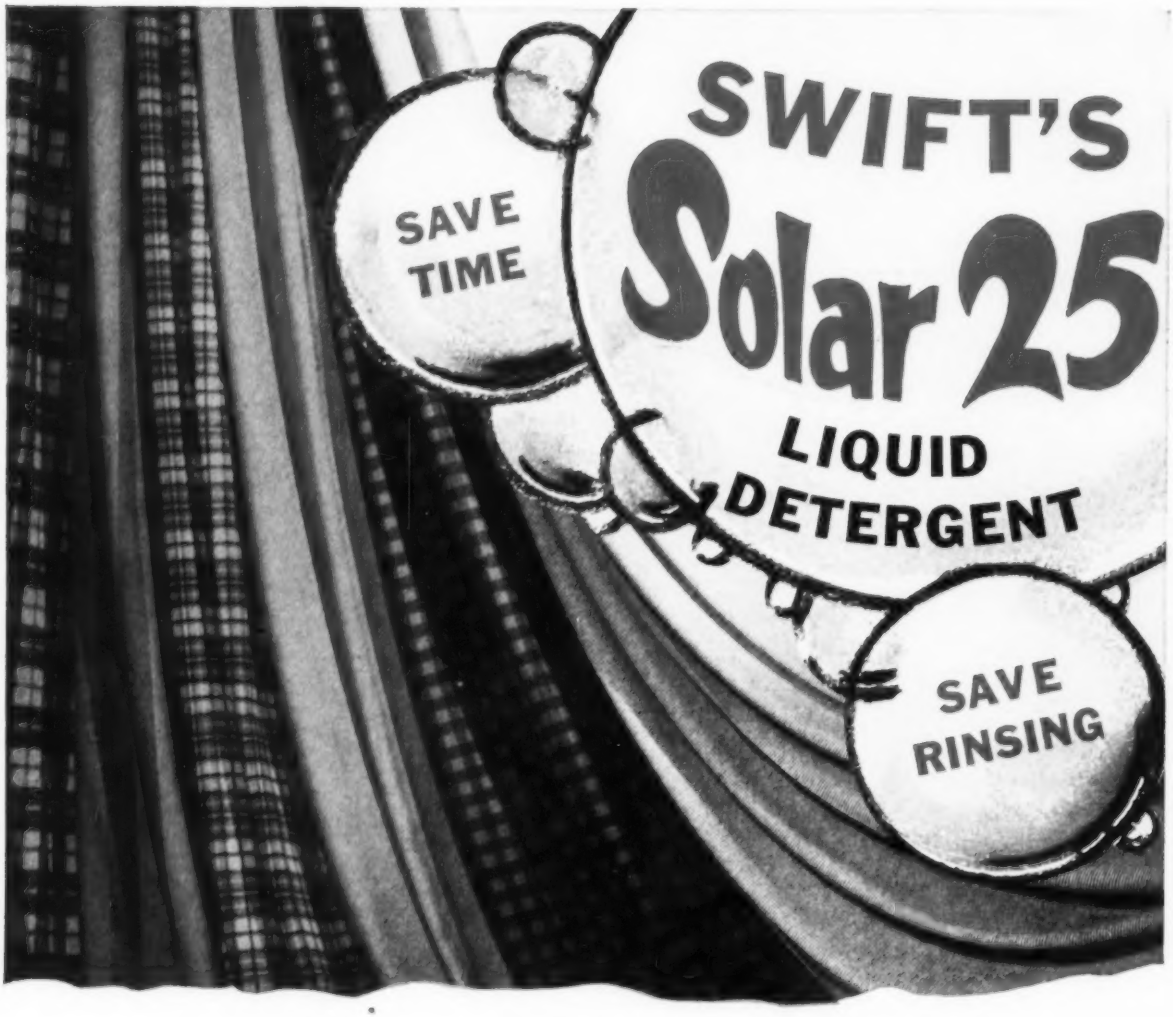
Be sure to write for more information on these anti-static cots. Address Armstrong Cork Company, Industrial Division, 6502 Ivy Street, Lancaster, Pennsylvania.

Armstrong ACCOTEX COTS

. . . used wherever performance counts



NOT A LAP-UP IN SIGHT . . . on this modern frame equipped with Armstrong anti-static cots. Even when spinning synthetic fibers, these specially compounded cots carry off the static electricity before it can create a lapping problem. In many cases, these cots also help reduce waste.



SOLAR FLAKE DETERGENT

40% active anionic Sodium Alkylaryl Sulfonate. Drum dried to provide small, dense granular flakes that take up less storage space than spray dried products. Active in hot or cold, hard or soft water, in acid or alkali solutions.

SWIFT'S WHITE RIBBON

A neutral, high titer (41-42° C.) soap available in chip or powder form. Widely used for wool, cotton or synthetic fiber processing. Particularly recommended for active, long lasting suds in higher temperature washing cycles.

SWIFT'S T-25

A neutral, medium titer (25-28° C.) red oil soap—in flake form.

SWIFT'S VERTEX FLAKES

Sodium Oleate low titer (10-12° C.) soap. Excellent for variety of low temperature operations.

More and more wool processors are taking advantage of Swift's Solar liquid detergent to help them save rinsing time and additional scouring agents.

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For Highest Efficiency
Less Maintenance
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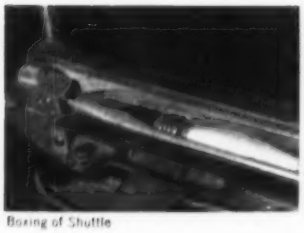
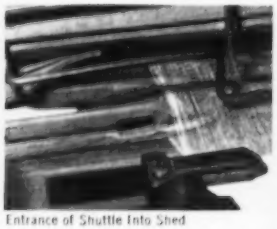
These GR Stroboscopic Devices Have Proven Invaluable in Hundreds of Mills



Boxing of Shuttle



Entrance of Shuttle Into Shed

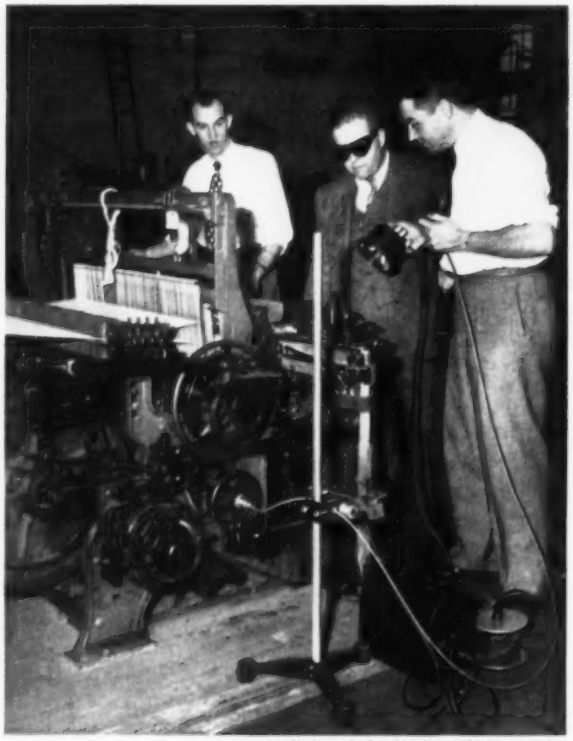
While the loom was operating at top speed these photographs were taken with a Type 1532-B STROBOLUME and a Type 1535-B Contactor and show exactly how these important loom operations are taking place. Maladjustments and worn parts are spotted quickly and simply.

Other equally important loom functions which can be seen with this equipment are:

- √ Flight of Shuttle
- √ Behavior of Filling on Bobbin
- √ Loop of Filling as Shuttle Enters Shed
- √ Contact of Filling Feeler and Bobbin
- √ Transfer of Bobbins
- √ Action of Cutters
- √ Clearance of Protection
- √ Raising of Parallel Shoe from Parallel
- √ Behavior of Beat Up
- √ Flexing of Picker Sticks
- √ Checking of Mesh Gears

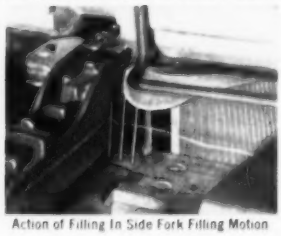
Correct adjustment and maintenance of any loom is simple with the STROBOLUME. Let us tell you how.

Write for STROBOSCOPIC EYES FOR INDUSTRY



Photographs Courtesy Lowell Textile Institute

Flexing of Shuttle Check Strap After Picker Stick Strikes on Forward Motion



Action of Filling In Side Fork Filling Motion

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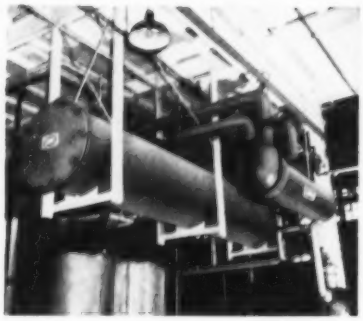
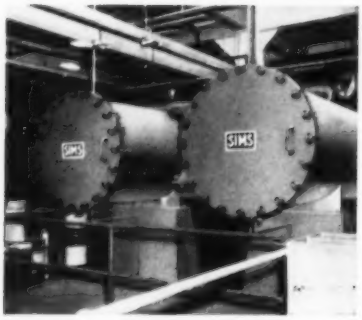
These 3 FINISHING PLANTS save money with SIMS EXCHANGERS



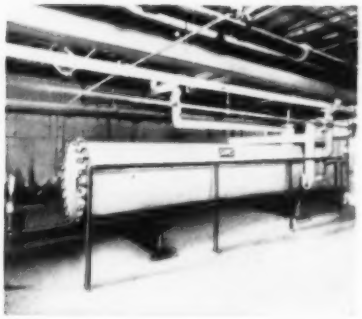
at Pepperell, Ala.

6 large Sims Textile type Heat Exchangers serve bleaching and dyeing ranges and mercerizer. Each waste water exchanger is connected to a Sims booster exchanger using steam to raise temperature of water. Typical of all, is the operation of one, on the dye range, fresh cold water introduced at 72°F. is raised to 136°F. The 6 Sims Exchangers were equivalent to an added 40,000 lbs. hr. boiler.



at Granitville, S.C.

2 very large Sims Textile type Heat Exchangers are fed from a hot waste water collecting tank. An average of 50,000 gallons per hour of incoming fresh water gains 42°F. passing through the exchangers. These 2 Sims Exchangers are floor mounted and serve dyeing ranges and mercerizer to convert waste hot water into usable hot water.



at Clevedale, S.C.

One of 3 Sims Textile type Heat Exchangers serves a mercerizing department. About 250,000 gals. per day of waste water at 175 to 180°F. are passed through this exchanger. Incoming fresh water at 77°F. gained 35°F. at a flow of 172 gallons per minute. Savings on a 24 hour basis amounted to 83,062,500 B.T.U.'s. The 2 other Sims Exchangers operate on bleaching ranges.

Why it's routine to keep a SIMS clean - - -

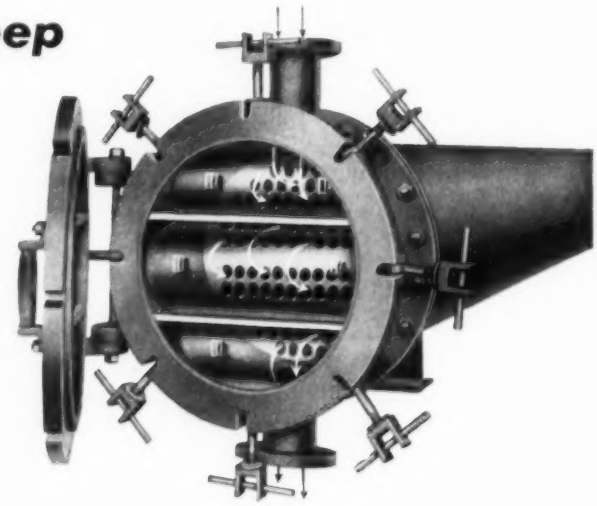
Swinging doors at each end open wide to expose full length of straight-thru 1¼" diameter tubes.

In 30 to 60 minutes a Sims Exchanger can be clean as a hound's tooth and back on the line.

You can be sure a Sims is clean, for you can see it.

There are scores of installations by Sims of Erie in the South for you to see first hand.

Ask for Bulletin TE-4.



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Erie, Pennsylvania

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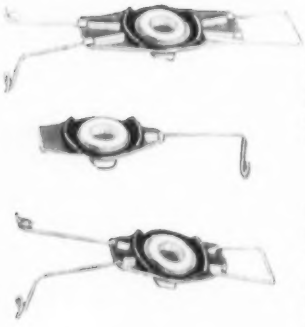
Special Conical Rings and Special Flyers



HERR Flyers produce light tensions at high speeds, perfectly balanced for accurate yarn control and reduced vibration.

There is a HERR Conical Ring for the spinning or twisting of any yarn.

Having problems with new fibers? Don't waste time experimenting. New physical characteristics of the fibers require changes in the processing equipment to attain best results. Call Herr for the best Conical Ring and Traveler combination to give you complete control of new fibers and filaments. Write for information today!

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Fabric backings go on easy and last long

A little bit of ACRYSOL GS thickener goes a long way in improving the backing of carpet and upholstery fabrics. First off, application is easier because ACRYSOL makes compounds unusually smooth in texture and exceptionally stable in viscosity. Secondly, the backing itself is better. That's because ACRYSOL GS provides a smooth coating with excellent resistance to aging, dusting, and unusual uniformity in application.

ACRYSOL GS is so widely compatible and such an efficient thickener that it can be used with many resins, latex emulsions, and filler ingredients. For still other backing systems, two new thickening agents are also available. ACRYSOL ASE-60, a non-linear thickener, provides high viscosity in small concentrations. ACRYSOL ASE-75, a linear thickener, is especially suitable for GRS rubber.

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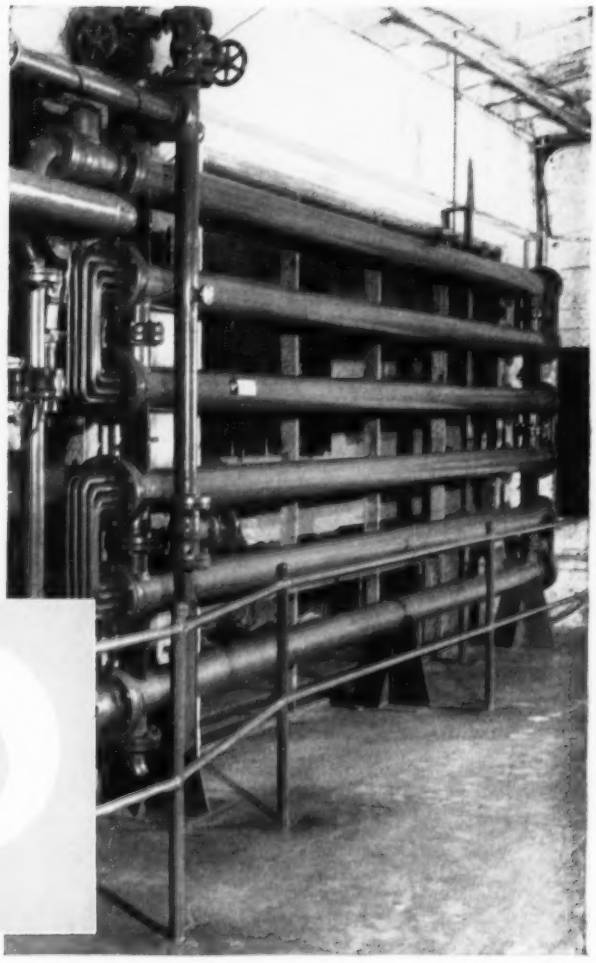
When your boiler's overloaded . . . a Bready System of Waste Heat Recovery is your ace in the hole



RELIEVING excess boiler loads is only one of many jobs that Bready Systems of Heat Recovery from waste water are being called on to do. When a plant is faced with boiler difficulties, installing a Bready System is like having an "ace in the hole" that pays off by giving the plant the necessary capacity of a new boiler but without its increased fuel requirements, and at much less capital investment. At the same time, the Bready System will reduce the amount of fuel required by the present boiler.

Above and beyond these advantages, a Bready System balances the hot water system by normalizing flow rates. High volume hot water is also uniformly supplied at specific temperatures and fill time is greatly reduced. Maintenance is at a minimum—cleaning of the system is automatic!

Get all the facts on a Bready System as it applies to your plant. Write, wire or phone for complete details, or a free plant survey.

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MANUFACTURERS OF BREADY SYSTEMS OF WASTE HEAT RECOVERY

Union Underwear Co. (Taylor Mfg. Co.), Campbellsville, Ky.
This new plant is the last word in production efficiency from receipt of yarn at rear end of lower floor thru knitting and bleaching to upper floor for cutting, sewing, pressing, boxing and shipping at upper floor platform shown.

Lockwood Greene have completed over 300 engagements in the Knit Goods field and have had over 4,000 engagements in the entire textile field.

LOCKWOOD GREENE PROJECTS IN . . . . .
KNIT GOODS

Humboldt Full Fashioned Hosiery Mills
Humboldt, Tenn.
This plant is a completely integrated mill carrying through all operations from receipt of the yarn to the shipping of finished hosiery.

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LOCKWOOD GREENE
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BACK-SIZING modern upholstery fabrics with just the *right* formulation of rubber or rubber-and-plastic latex adds value to the fabric out of all proportion to its meager cost. Specifically, it—

- **Anchors the weave, twist or pile**
- **Eliminates raveling of cut edges**
- **Improves body and hand**
- **Minimizes water spotting**
- **Prolongs wear**
- **Maintains dimensional stability**

Leading upholstery manufacturers depend on Naugatuck's tailored-to-order latex compounds to give their fabrics added value, aesthetically as well as physically!

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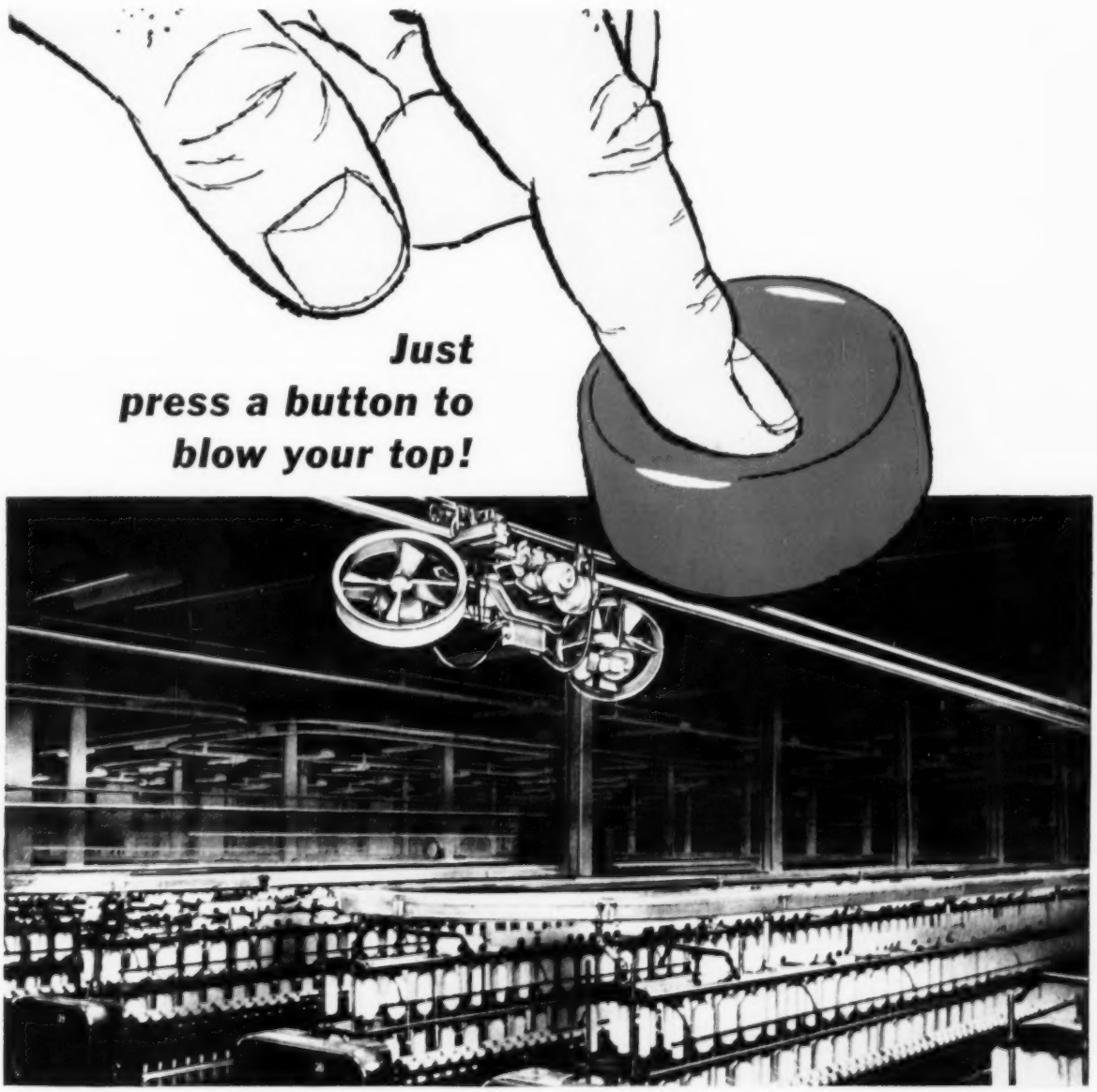

Just press a button to blow your top!

Cleanliness and the elimination of lint from the ceilings of your mills is important to you. The accumulation of lint is not only a fire hazard but causes "slubs" or "gout" by falling into the processing machines. Now, you can have *continuous* cleaning without disturbance to production or personnel below with the Louden Automatic Twin-Fan Ceiling Cleaner.

The Louden Twin-Fan Cleaner travels overhead on a Monorail track that "blankets" the room to be kept clean. The twin fans, an exclusive Louden feature, sweep in *opposite directions* on both sides of the track at once, eliminating dead air pockets when traveling under beams, ducts and other ceiling obstructions. This also aids in equal distribution of humidity. The twin fans are independently adjustable, can be pointed in any direction, thus meeting the needs of your room. They may be automatically shut off and turned on as necessary.

With the Louden Automatic Twin-Fan Ceiling Cleaner you can be sure of highest dependability, efficiency and economy, because this is another product of Louden's long experience in designing and building overhead track and overhead equipment of every type. If you have a ceiling cleaning or a materials handling problem, let a Louden engineering representative tell you how Louden can be of help to you. Write or wire today.

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DOW

In their brief but exciting history, chelating agents have encountered reactions ranging from scoffs and disbelief to over-zealous exaggeration about their application. But the air is clearing. Already they are serving as important tools in many industrial processes. This is the beginning of a series on chelating agents designed to further clarify what they are, what they will do—and won't do.

The Chemistry of Chelation: Part I

Chelation defined · Example of the reaction · Variety of applications · Future of chelating agents

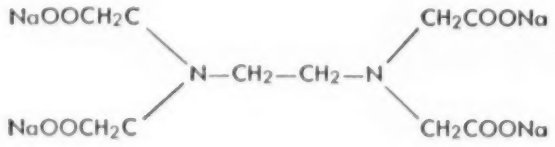
Polymerization of synthetic rubber controlled . . . soap kept white and sparkling on the dealer's shelf . . . textiles bleached and dyed with permanent uniform colors . . . pharmaceuticals stabilized. Unrelated reactions? Certainly. However, all are accomplished by a group of closely related chemicals called chelating agents. How do they work? Well, it's not magic, but chemistry—in a way, fairly basic chemistry. But let's begin at the beginning.

What Is Chelation?

Let's look at the word chelation. It is derived from the Greek word *Kelos* which means "claw." Simply stated, a chelate is a claw which holds a metallic ion inactive in solution. Chemically stated, chelation is a chemical reaction in which polyvalent metallic ions are reacted with organic reagents (chelating agents) to chemically inactivate these polyvalent metallic ions in the form of an extremely stable, water-soluble chelate.

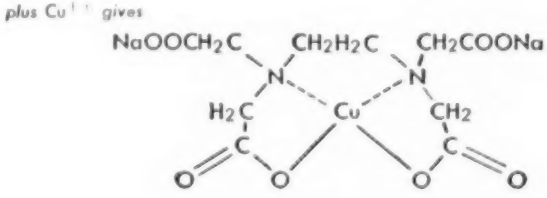
Typical Reaction

If we examine a typical reaction, the process of chelation becomes quite clear. Let us take, for example, the chemical structure of Versene®, one of the Dow chelating agents.



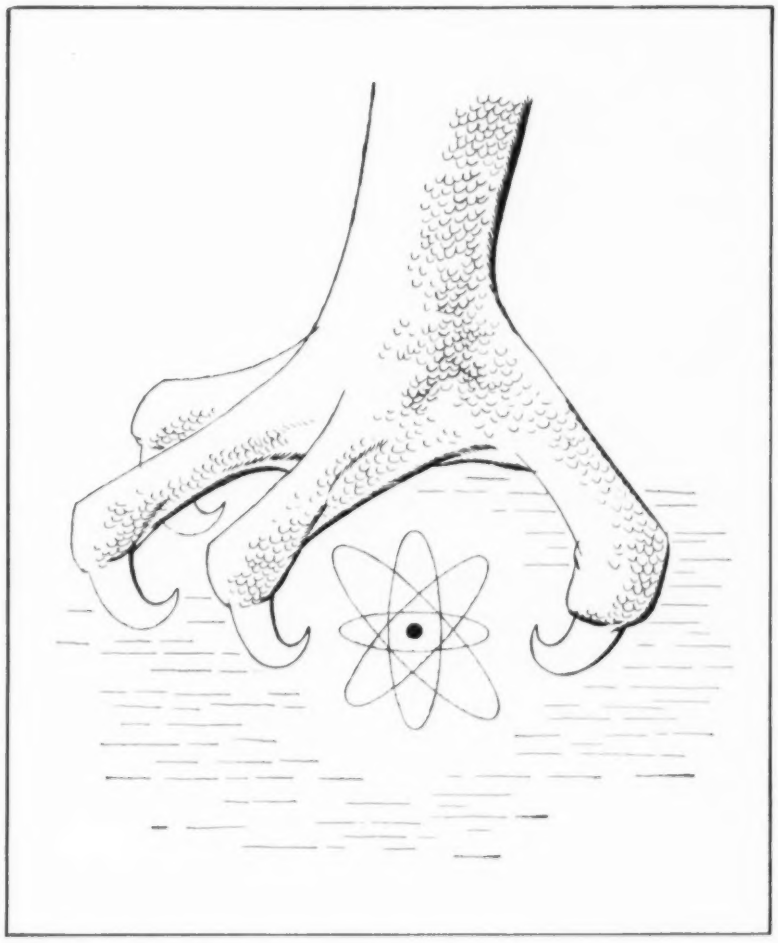
Versene

Now, if we place the Versene in a solution which contains free polyvalent ions of copper (Cu^{++}), the following is the result:



Versene Copper Chelate

The resultant compound is Versene copper chelate. The copper ion has become a member of an inner ring structure in the molecule. The result?



It is inactivated. It cannot react with soap to cause darkening and stain during storage.

It can't cause breakdown of pharmaceuticals. It can't cause any trouble anywhere because it is locked in the Versene claw. It will stay locked in unless it is desired to reverse the process. This reverse action is used in polymerization of synthetic rubber—ions of iron being released at a predetermined rate by the chelate.

Variety of Applications

The most important thing, however, is that this "claw" property of chelating agents such as Versene makes it possible to solve a multitude of processing problems in industry. They've been used in tanning leather and tenderizing peas.

They can descale boilers, soften water and cure acute lead poisoning. The number of current industrial and medical applications is large, but the potential in unexplored areas is enormous.

And the Future?

The future of these products will hinge on the imagination and insight of chemists and engineers, of production men and purchasing agents, in nearly every industry. Wherever metal contamination poses a problem or wherever controlled introduction of metal ions is desirable, these chemicals warrant investigation.

Versene and other Dow chelating agents won't solve them all. Chelation is not a panacea. It will work chemically in some areas—it will fail in others. However, it is Dow's intention to assist in every way in the uncovering of processes in which chelating agents can be profitably used. Inquiries on your company letterhead will be handled with dispatch. We will be pleased to provide information and technical assistance. Write to Technical Service and Development, Dept. CA 900C THE DOW CHEMICAL COMPANY, Midland, Michigan.

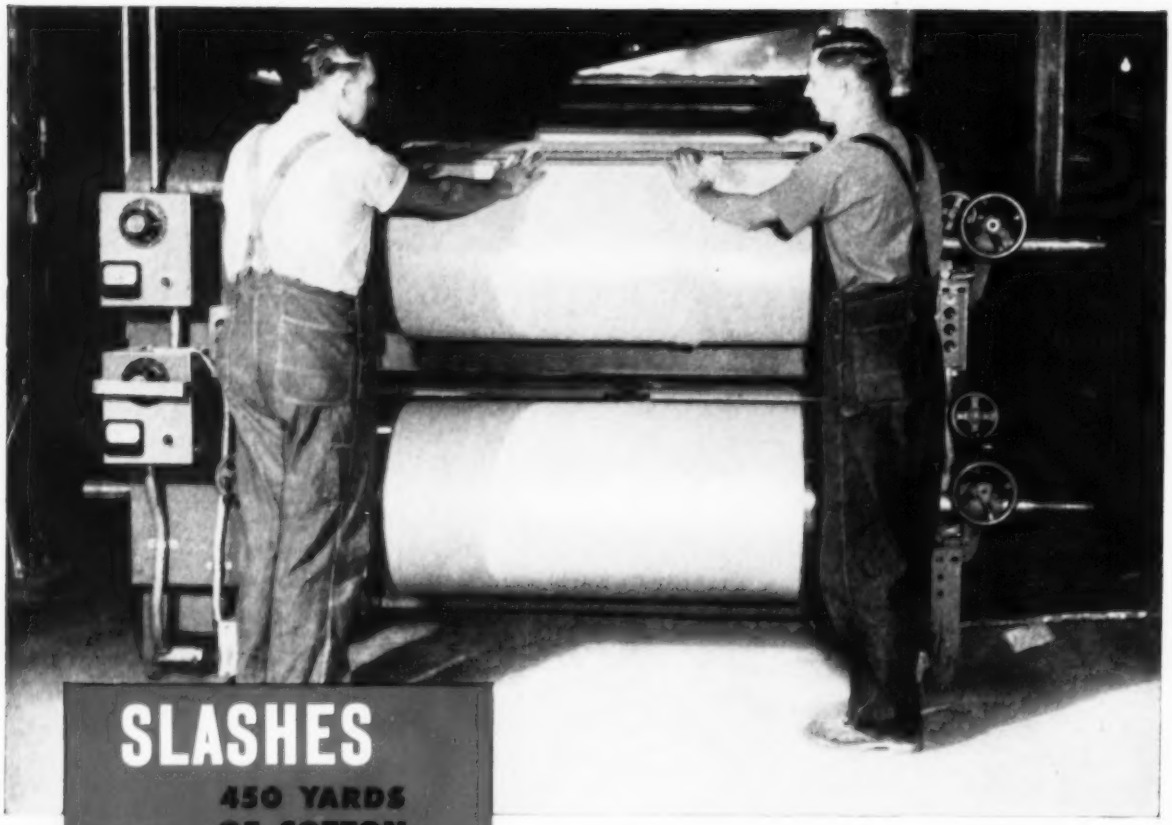
The next three topics in this series

PART II The Versene and Versenol® series of Dow chelating agents (what they are, strength and stability features—Versenol lower cost, less strength). Also—how chelating agents are specified (product performance versus chemical composition).

PART III Specific chelating agents for specific applications—(agent for iron control depends on pH—Versene Fe-3 Specific® for iron and transition metals on the alkaline side, Versene T® for iron in presence of free caustic—other solutions to special problems).

PART IV Applications in specific industries (formulation of alkaline cleaners—stabilization of hydrogen peroxide and Kier boiling in textile processing—uniform control of metal trace catalysts in polymerization of synthetic rubber—other industrial applications).

YOU CAN DEPEND ON DOW



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This double-beam slasher is powered by a Reliance Packaged Multimotor Variable-Speed Drive, with the automatic drive controls located 20 feet away from the machine, completely out of the way.

This particular mill is slashing 450 yards of cotton yarn every minute, and is running an average of 12 hours per day.

Reliance Slasher Drives give up to 25% greater production at lower cost by winding more yarn per beam.

They are completely packaged, factory wired and tested.

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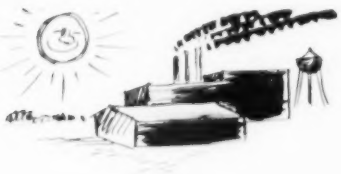
News in Brief

Burlington President Confident. Strong confidence in the outlook for the textile industry in general and Burlington Industries in particular was voiced recently by Burlington's president Herman D. Ruhm, Jr., based on four consider-



ations: close to capacity operation, with goods being consumed at a rate approximately equal to output; elimination of marginal producers; a growing population and an expanding economy; and the ever-growing variety and versatility of textiles as new fibers and improved dyes and finishes are developed by the chemical industry.

No Santa Claus? The U. S. Chamber of Commerce, quoting from the *Wall Street Journal*, notes that the Federal Civil Defense Administration will negotiate a $1 million contract for blankets to be produced by inefficient, high-cost firms. To be eligible to negotiate

for the bulk of the blankets, a company must agree that the contract will not push its work week beyond 80 hours or two 8-hour shifts a day. This is designed to help those companies which do not have enough work to keep them as busy as the others. Yes, Virginia, there is a Santa Claus.

FTC Halts Fictitious Ticketing. Federal Trade Commission has approved orders prohibiting three New York hosiery firms from preticketing hosiery with fictitious retail prices. One of the firms was also enjoined not to use the words "Academy Award" or a similar trade name to suggest that the hosiery had won an award.

Peddlers Sell Waste Nylons. National Association of Hosiery Manufacturers has issued a press release warning women against street peddlers who have been selling crudely mended nylon hosiery, salvaged from waste sold

by the mills. The waste hosiery is reported to be badly mismatched in size and color, in addition to the crude mending. Peddlers sell the hosiery at 30 cents per pair, but it is usually worth nothing to the purchaser.

Mills Can Diversify, Remain Textile. Many firms in the textile industry have financial, technical, and managerial resources which can be successfully applied to nontextile lines without necessarily requiring a forfeiture of the firm's present position in the textile industry, according to the Diversification Institute, which does research and counseling in diversification. The Institute warns, however, that diversification is a course of action which must be carefully considered in the light of the specific situation in which individual companies find themselves.

Governor Chides Eisenhower. Georgia's Governor Marvin S. Griffin has charged the Eisenhower administration with not giving the textile industry the relief from cheap imports promised by Presidential Assistant Sherman Adams in an address to the Northern Textile Association a month before election [TI for Nov. 1956, p. 123]. "We all hope that Mr. Adams was not playing politics with our textile officials and the hundreds of thousands of textile workers when he solemnly announced that relief from the crushing Japanese imports was forthcoming," said Gov. Griffin.

Salaries, Wages Up. American Management Association reports that compensation of top corporate executives increased an average of 5.9 per cent in 1955 over the previous year, and that average weekly earnings of production workers in all manufacturing industries also increased 5.9 per cent. The figures are based on a

survey of 3,300 American and Canadian companies. Other increases: middle management, 5 per cent; sales personnel, 3.5 per cent; engineers, scientists, and other administrative and technical personnel, 8.6 per cent.

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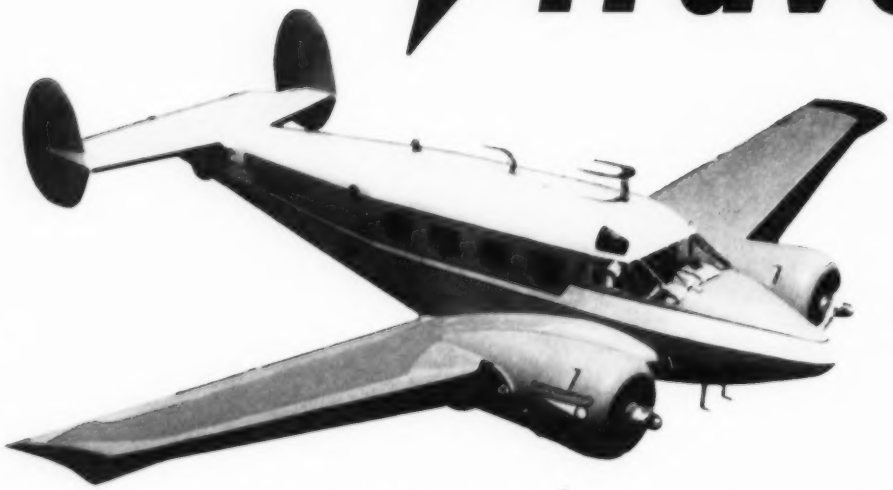

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Beechcraft → airfleet of the textile industry

CQ for Textile Hams. An effort is being made to acquaint all amateur radio operators within the textile industry with one an-

other. Several so far located are:

A. L. Butler, Jr. (W4BPU), Arista Mills Co., Winston-Salem, N. C.

Agnew H. Bahnson, Jr., (W4ROG), The Bahnson Co., Winston-Salem, N. C.

E. J. Williams (W4HUO), Pneumafil Corp., Charlotte, N. C.

J. N. Pomeranz (K4AU), Roberts Co., Sanford, N. C.

Jess B. Tatum (K41BX), Tatum Machinery Co., Kershaw, S. C.

Those interested should write to P. O. Box 205, Sanford, N. C., giving their name, call letters, company affiliation, equipment used, bands operated, and any other pertinent information. All information received will be collated and sent to those who respond.

AATT Expands. The first chapter of the American Association for Textile Technology to be formed outside New York City is being organized in Elizabethton, Tenn., where plants of American Bemberg Division and North American Rayon Corp. are located The AATT section, to be called the Appalachian Chapter, is being organized by Frederick Anderson, project engineer for North American Rayon Corp.

Raise Equals Over 11,000 New Jobs. The wage increase granted by South Carolina textile mills last fall amounted to about $30 million annually, which is the equivalent of something like 11,477 new jobs for the State at the current average manufacturing wage of $2,614.84 annually, it is pointed out by the South Carolina State Labor Commissioner.

No Cotton Support Change. Talk of adoption of a compensatory payment plan which would allow cotton to decline to its unsupported price level both for domestic and export sale is discounted for the 1957 crop by commodity experts at Merrill Lynch, Pierce, Fenner & Beane. Reasons: The plan is not favored by Agriculture Secretary Benson; present demand by domestic and foreign consumers will exceed this season's production,

News in Brief

which should work against adoption of any program change; the plan is opposed by most of the major farm groups; and new legislation would be required, which would take considerable time.

Japanese Wool Industry Zooms. Japan's output of woolen and worsted yarn, which averaged about 132,000,000 lb per year in the 30's, and which was only about 28,186,000 lb in 1946, zoomed to a

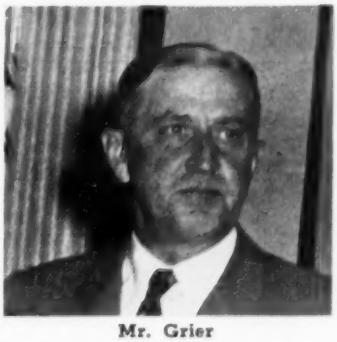
total of 184,660,000 lb in 1955, and 169,099,000 lb for the first nine months of last year. Further, while the prewar output of wool fabrics was largely of the type intended for Japanese-style clothes, the current output is largely in fabrics intended for Western-style clothes. The Japan External Trade Recovery Organization has launched an intensive drive to increase exports of wool fabrics; part

Grier Outlines Textile Opportunities for South Carolinians

F. E. Grier, president of the American Cotton Manufacturers Institute, predicts that thousands of job opportunities await the young people of South Carolina who complete their education in the next 10 years.

Speaking before a group of guidance counselors meeting at Clemson College, Mr. Grier said, "Our whole economic future is wrapped up in cotton and textiles. And if our state meets the challenge of the future, it will meet the challenge of the manpower needs of the cotton industry."

He told the counselors the textile industry, in the next 10 years, will need more than 5,000 college trained men and women, more than twice the number of students presently enrolled in the nation's textile colleges.



Mr. Grier

He pointed out that 71 per cent of manufacturing wages in South Carolina are provided by the textile industry. He also noted that the economic situation in South Carolina that caused the state's young people to search elsewhere for better opportunities was changing for the better.

"But," he added, "the change is developing so fast that I wonder if South Carolina will be able to produce highly skilled young people fast enough to meet the needs of our growing textile industry."

Mr. Grier said the textile firms will require industrial engineers, textile chemists, chemical engineers, accountants, and hundreds of electrical, mechanical, and ceramic engineers.

He added, however, that the estimated personnel needs are based on 1956 production methods, products, and conditions and did not attempt to take into consideration the needs that would result from technological advancements accompanying the application of atomic sciences and newfound electronics.

"Buffalo"

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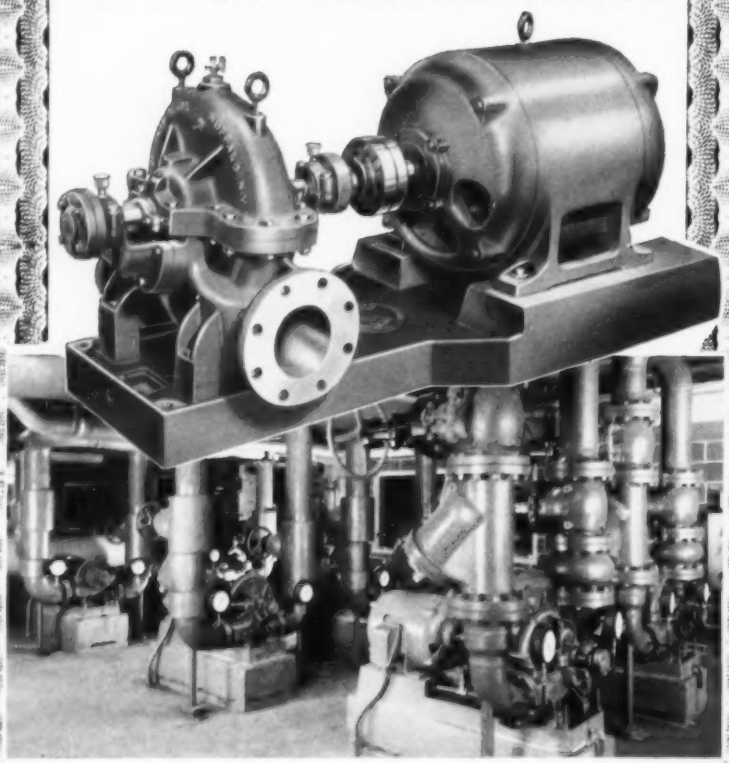

- "Buffalo" reliability proved by three-quarters of a century
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A BETTER CENTRIFUGAL PUMP FOR EVERY LIQUID

BROAD WOVEN FABRICS PRODUCTION
(Millions of Linear Yards)

Type of Fabric	Third Quarter 1955	Second Quarter 1956	Third Quarter 1956	% Change from 3rd Quarter 1955	% Change from 2nd Quarter 1956
Man-made and silk	620.4	565.4	498.9	—20	—12
Rayon and acetate	454.2	409.5	353.3	—22	—14
Nylon	99.7	70.4	60.8	—39	—14
Other man-made and silk	66.5	85.5	84.8	+24	— 1
Woolen and worsted	75.9	87.9	79.6	+ 5	— 9
Cotton	2,417	2,621	2,356	— 3	—10

News in Brief

of the drive included a Japanese Wool Fair in New York during the last week in January.

Hart Memorial. Friends of the late Prof. Thomas R. Hart, director of instruction at N. C. State College School of Textiles until his death just over a year ago, are establishing a scholarship fund in his memory, for outstanding sophomores at the School.

Consumers Trade Up. Wool Bureau sees evidence of a marked upgrading of the American consumer's tastes in clothing and his growing willingness to be "traded up" to better quality apparel in a recent sharp rise in the demand for wool.

AATCC News. The Piedmont Section of the American Association of Textile Chemists and Colorists is conducting a research project on the application of radiochemical techniques to textile problems. * * * Delaware Valley Section is the new name of the Association's former Philadelphia Section. * * * AATCC's annual convention for 1957, to be held in Boston Nov. 14-16, is to be an "inexpensive" meeting, to attract a larger attendance than at some previous conventions.

Recording Weaving Faults. A device for attachment to cloth examining machines, recently introduced by Johannes Menschner Textilmaschinenfabrik, Dulken, Germany, automatically knots the marking thread and marks the type and location of the defect on a recording strip. Possible patterns of defects can therefore be spotted, and their causes traced.

Inflation Note. The erosion in the purchasing power of the dollar is brought home clearly by an item in a recent issue of the First National City Bank's *Monthly Letter*. A capital sum invested ten years ago, with all interest reinvested at the same rate, would have had to

MERCHANDISING NOTES

Du Pont Co. will undertake, starting in fall 1957, a national tagging program for men's and boys' suits, slacks, and sport coats of fabrics containing 55 per cent or more of Dacron in blends with rayon.

Courtaulds (Alabama) Inc. notes that its Coloray solution-dyed rayon fiber is used in the upholstery of Chrysler, Ford, General Motors, and Studebaker-Packard cars for 1957. * * * U. S. Rubber Co. has announced that some of the '57 Oldsmobiles are using Trilok polyethylene-containing fabric. * * * American Sheep Producers Council, Inc., has launched a campaign to persuade automobile manuafcturers to use wool in car interiors.

Coopers, Inc., sponsored "National Long Underwear Week" in mid-November. * * * R. H. Macy & Co., New York department store, reports "outstanding sales response" to a promotion of 75-25 cotton-dynel long underwear knitted by P. H. Hanes Knitting Co.

Eastman Chemical Products, Inc., will launch a textile fiber promotion campaign this year through its recently formed Textile Merchandising Department.

A. & M. Karagheusian, Inc., announced toward the end of last year that, beginning January 1, all carpets in their Gulistan line would be sold on a per-square-foot basis rather than on the usual per-square-yard. However, dealer opposition prompted the company to reconsider, so customers will still have to remember to divide by 9, and not by 3, to convert their room measurements from sq ft to sq yd.

Benjamin Moseley Co. is test-marketing a women's Shetland-weight sweater in 100 per cent Darlan dinitrile fiber.

J. P. Stevens & Co., Inc.: Hess Goldsmith Division, Burlington Industries, Inc.; and Owens-Corning Fiberglas Corp. are joint sponsors of a promotion of Fiberglas curtains and draperies on NBC-TV's "Home Show." The promotion is claimed to be the first of its type to be jointly sponsored by mills and a fiber producer.

Net Association of America, composed of knitters, dyers, and converters of nets and laces, is sponsoring a series of radio and television programs, fashion shows, etc., financed by a charge of 1/3 cent per pound on members' production.

Wool Bureau attributes a 12 per cent increase in per capita consumption of apparel wool since 1954 to a national advertising campaign for wool launched in 1954.

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earn 3.4 per cent interest to grow enough in nominal value to keep up with the average rate of depreciation of the dollar, *if the interest were free of income tax.* A person in the 20 per cent income tax bracket would have required a taxable interest rate of 4.3 per cent; in a 40 per cent bracket, 5.7 per cent; and in an 80 per cent bracket, 17 per cent. And all this just to keep abreast of inflation and avoid actual loss!

Mexican Cotton Prospects Poor. A survey by the U. S. Department of Agriculture indicates that the 1957 crop of Mexican cotton will fail to reach the 1.7 million bales produced in 1956, and may fall half a million bales below the record 2.2-million bale production of 1955, because of water shortage. Mexico is now the second largest exporter of American-type upland cotton, and competes directly with American exporters in world markets.

Arbitration Cases Up. A total of 165 cases were submitted to the General Arbitration Council of the Textile Industry during 1956, compared with 117 in 1955, and the

highest number for any year since 1952, when 178 cases were received. Of the 165 cases, 55 were settled or withdrawn prior to hearing. Smallest amount involved in a case was $229, and largest was $103,181.

PTI Buys Land. The Philadelphia Textile Institute Foundation has purchased for the benefit of the Institute approximately four acres of land across from the present campus. This plot will allow for expansion of the campus facilities, heretofore limited to the presently occupied twelve-acre site.

Cure for Seam Puckering. Seam puckering with synthetic fabrics can be prevented by modification of thread properties—dimensional stability in presence of heat and water, high stretch modulus, and low bending modulus—and by modification of sewing conditions, D. G. Bannerman of the Du Pont Co., recently told a meeting of the Thread Institute.

Pile Fabric Manufacturers Must Catch Up—Herrnstadt

An increasing population (nearly 5 million people in the age group of 21 within the last 4 years) means intensification in the demand for pile fabrics, and requires a greater output. Nobody will be harmed by the development of machinery which enables one operator to produce twice or three times than what he did before. This, instead of mounting labor costs, will enable the manufacturer to pay higher wages at a lower cost per unit.

He must attempt to obtain improved machinery and develop speedier processes . . . , rather than move his present machinery to areas of so-called cheaper labor. He must take a keen interest in developments of materials handling, thereby decreasing those costs by a very considerable percentage.

He is not going to do this by refusing to pay engineers, chemists, and other technical personnel salaries equal to those paid in industries which seem to have more glory surrounding them, such as the aeronautical, electronic and automotive fields. Primarily, pile fabric manufacturers have to catch up with their delinquency of progress over the past decades. They must acknowledge that they are no more manufacturers of luxury items than are, for example, the automobile manufacturers.

Mr. Herrnstadt

There is a need for their product. The more demand they create by the production of new and novel materials, based on new and novel ideas, the more they will reap the harvest of their own initiative.

Is it not a fact that most manufacturers of terry, for example, made no improvements in their methods until someone came along who did and, by virtue of competition, forced them into new channels? Is it not true that the haphazard trial and error methods used for decades in the manufacture of pile fabrics became too slow in an age of ever-increasing pace in technical advancement? And, is it not true that research and development expenditures in the pile fabric industry are less than 10¢ for every $100 added to the value of goods, compared with 64¢ per $100 added by manufacturing industries as a whole?

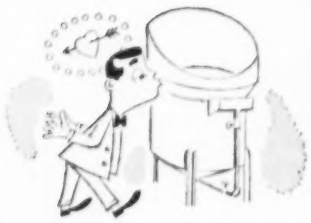
The manufacturers should make certain that their products are not sold under false pretenses, and that a pile fabric containing 10% nylon for instance is not sold as a nylon fabric.

The pile fabric manufacturer owes it to the retailers to supply them with selling aids for their salesmen, so that these men—who finally sell the product to the consumer—are able to explain the pros and cons of a certain fabric intelligently, rather than haphazardly.

It has been proved often enough that new developments, coupled with imagination and foresight, will create an ever increasing want in the buying public. The pile fabric industry cannot stand still. It must catch up with its do-nothing past.—*Gerald E. Herrnstadt, head of patent and development department, The Firth Carpet Co., Firthcliffe, N. Y., at a meeting of the American Association for Textile Technology.*

Using Salt Efficiently

by **INTERNATIONAL SALT COMPANY, INC.**—America's largest producer of salt



You Can Save Money on Water Softening—With a "Lixator"

Today, a great many companies using zeolite water softeners are faced with this problem: While the water softener (which needs periodic regeneration with brine) gives excellent performance—regeneration is often costly, time-consuming, and causes substantial waste of salt. This is generally the case when salt is dissolved to form brine without the proper controls.

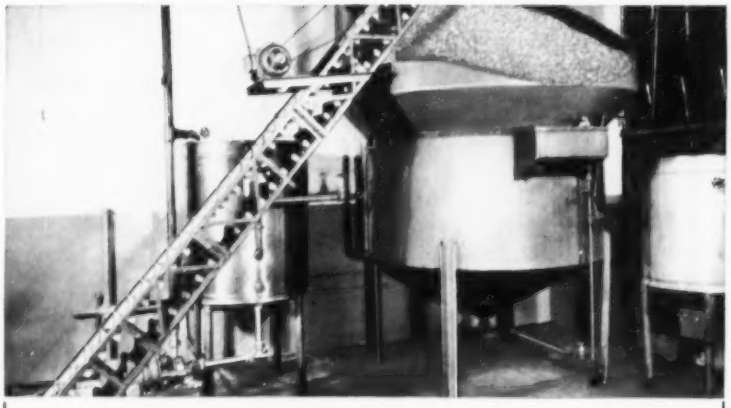
In most plants, however, it *is* possible to reduce this high cost of water-softener regeneration. The method is simple and effective: Always regenerate with pure, fully saturated brine—the type of brine made in a Sterling Lixator. Here are some of the reasons why Lixate Brine can save money for users of zeolite water softeners . . .

The Sterling Model Lixator is the most efficient and economical rock-salt dissolver ever developed. Wherever this fully automatic unit is used in water softening, it reduces the amount of salt consumed . . . eliminates dry-salt spillage . . . and simplifies the entire brine-making process. Developed and patented by the International Salt Co., the Lixator combines rock-salt dissolving and brine filtration in one simple operation. It delivers fully saturated crystal-clear brine *automatically* to any point within a plant. The Lixator is also remarkably easy to maintain, and has no moving parts to get out of order.

In operation, a Lixator need not replace the salt-dissolving tanks furnished by water-softener manufacturers. Instead, Lixate Brine is piped to these tanks—which then serve as the storage and measuring tanks from which brine is withdrawn for use.

Salt handling reduced. Because Lixate Brine is *piped* to points of use, the work of hauling dry salt from storage piles to the location of the water softeners is eliminated. Also, because of this direct-piping feature, the Lixator (and the salt that feeds it) can be placed anywhere in the plant, to make the most efficient use of available space. With a self-feeding hopper for salt, the Lixator operates automatically, without attention, and with little or no salt handling.

Lixators are made in a variety of types and sizes—to meet the brine needs of individual plants. The principle by which they operate can benefit the largest factory, or even a plant of moderate size.



At the Libby, McNeill & Libby plant in Hartford, Wisconsin, this Sterling Model Lixator is used for efficient, low-cost water-softener regeneration. A mechanical conveyor fills the Lixator hopper from a nearby rock-salt storage pile. In *your* plant, a Lixator can also produce substantial savings on salt—and in salt handling as well.

Complete regeneration. Since Lixate Brine is always 100% saturated, it provides complete water-softener regeneration each time. This means that extra regenerations—with the consequent use of more salt—are eliminated. Still another advantage results from using Lixate Brine: Water-softener operators will not use any more of this brine than is needed for each regeneration. What often happens in the case of unsaturated brine is that excess amounts are used in an attempt at complete regeneration. In the long run, this always results in a costly waste of salt.

Keeps water softeners clean. Besides being fully saturated, Lixator Brine—produced in a Lixator from economical grades of Sterling Rock Salt—is also self-filtered, and free from insolubles or other foreign matter. As a result, it will not introduce dirt or other "clogging material" into the zeolite bed of the water softener. This has proved to be a particular advantage in industrial water softening—because the zeolite stays in good condition longer. Lixate Brine is also free from acids or alkalies. Thus, being neutral, it cannot adversely affect the performance of any zeolite water-softening system.

TECHNICAL SERVICE WITH YOUR SALT

Through skilled and experienced "Salt Specialists," International can help you get greater efficiency and economy from the salt you use. International produces both Sterling Evaporated and Sterling Rock Salt in all types and sizes. And we also make automatic dissolvers in metal or plastic for both kinds of salt. So we can recommend the type and size of salt most perfectly suited to your needs.

If you'd like the assistance of an International "Salt Specialist" on any problem concerning salt or brine—or further information on water-softener regeneration—just contact your nearest International sales office.

International Salt Co., Scranton, Pa.

Sales Offices: Atlanta, Ga.; Chicago, Ill.; New Orleans, La.; Baltimore, Md.; Boston, Mass.; Detroit, Mich.; St. Louis, Mo.; Newark, N. J.; Buffalo, N. Y.; New York, N. Y.; Cincinnati, O.; Cleveland, O.; Philadelphia, Pa., Pittsburgh, Pa., and Richmond, Va.

FOR INDUSTRY, FARM, AND THE HOME—

STERLING SALT

PRODUCT OF INTERNATIONAL SALT CO., INC.

Why Ginghams Need Tariff Protection—Smith

The following is an excerpt of testimony given by J. Craig Smith, president of Avondale Mills, to the Tariff Commission last December 4 in support of a petition of the gingham industry asking that a reasonable limit be put on gingham imports.

I feel it should be made clear that the gingham industry's principal concern lies with heavy importations of ginghams themselves and of garments made from ginghams coming into this country from Japan. We are aware that ginghams enter to some extent from other countries, chiefly European. The industry does not at this time claim injury or threat of injury from these other countries.

The injury and threat of further injury we have experienced and foresee is from the extremely low cost competition of Japanese imports, which, if continued, must ultimately destroy us all. We know and recognize these facts and Japan knows and recognizes these facts also. Japan's own effort to set some kind of limits to this trade, both in cloth and garments, testifies to this knowledge on their part.

The 17 plants in the United States which at the outset of this investigation were making gingham—there are only 15 now!—these 17 plants constitute only 3 per cent of this country's mills and manufacture only 2 per cent of United States cotton broad woven goods production.

Thus 3 per cent of our mills, making 2 per cent of our production, were hit by 29 per cent of total U. S. imports of countable cloths from all countries in 1955.

Three per cent of our mills, with 2 per cent of our production, were hit by 33 per cent of U. S. imports of all countable cloths from Japan in 1955.

Three per cent of our mills with 2 per cent of our production were hit by 55 per cent of U. S. imports of countable cotton cloths from Japan in the first nine months of 1956.

Three per cent of our mills, with 2 per cent of our national production of cotton cloth, are called upon to shoulder 47 per cent of Japan's total quota of cotton goods for the United States for 1956.

The injustice of so few being compelled to carry so much of the burden of Japan's commerce with this country must be self-evident. When compounded with the vast influx of blouses, shirts, dresses and children's wear made of ginghams which simultaneously are flowing to our shores from Japan, the burden is intolerable. Never, in our opinion, have so few in our industry been forced to bear so much of the battle of imports.

Cotton cost combined with labor cost account for about three-fourths of the cost of textiles sold by our industry, and Japan has a vast advantage in both of these major components of cost. Ginghams do not vary particularly from this cost pattern.

Japan has still another concealed advantage. American mills . . . . spend large sums of money on advertising and promotion of such style fabrics as gingham, all of which becomes a part of our high cost of production. Japan, innocently on the suggestion of customers or with intent, adopts our styles and slides into a market ready made by our advertising and promotional expenditures without spending a cent for its ticket. It gets a free ride at the expense of our promotion, even as it is getting a free ride on the American taxpayer for its cotton, and concentrating on what amounts to export of its cheap labor.

If returns which are the fountain of our marketing resources are cut off by this unfair competition, there will not even be a real market left for Japan itself.

News in Brief

Dacron Parachutes. Researchers at Cheney Brothers have found that Dacron parachute materials have excellent dimensional stability up to 350 and possibly 400 F; show no appreciable loss of strength with exposures at 350 F up to 16 hours, although loss occurs with long exposures at 400 F; and can be designed with almost any air permeability range in fabrics from 2 oz/sq yd to 14 oz/sq yd. A 52-page report of the research, conducted for the Air Force, may be obtained from the Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C. Ask for PB 121187, "Development of Dacron Parachute Materials." Price: $1.50.

Quick Delivery by English Wool Mill. A Yorkshire wool mill received a cabled order from South America on a recent Saturday,

shipped the goods on Monday, they were received on Wednesday, tailored into army uniforms by Friday, and worn by the officers on a trip to the U.S.A. on Saturday, one week after they left the English mill.

Chinese Textile Production. According to a Japanese trade mission which visited Red China last August, textile statistics for that country are as follows:

Equipment	1956	1954
Cotton spindles (1,000)	7,080	5,137
Looms (1,000)	220	160
Production		
Cotton yarn (1,000 400-lb bales)	5,100	1,800
Cotton fabric (million meters)	5,580	1,006
Wool fabrics (1,000 meters)	13,570	4,470
Hard fiber fabrics (1,000 meters)	13,250	—
Jute bags (1,000)	75,000	9,730
Raw silk (tons)	63,910	3,725
Silk fabrics (1,000 meters)	69,920	34,850

Stretch Patents. Patentex, Inc., has been granted basic patents covering sheer stretch yarns and

hosiery. They include U.S.P. 2,771,759, Stretchable Stocking; and U.S.P. 2,771,733, Lively Yarn. About 40 domestic hosiery manufacturers are licensed under the Patentex patents.

TRUST COMPANY OF GEORGIA

ATLANTA

Condensed Statement of Condition

December 31, 1956

ASSETS

Cash on Hand and Due From Other Banks		$ 50,574,761.67
United States Government Obligations	$30,703,372.81	
Municipal Bonds	11,434,363.54	
Other Securities	399,713.81	42,537,450.16
Loans and Discounts		92,560,878.79
Overdrafts		12,582.06
Banking Houses		2,846,851.67
Customers' Liability on Acceptances and Letters of Credit		317,259.61
Accounts Receivable and Accrued Interest		873,159.85
Prepaid Expenses and Other Assets		296,834.24
TOTAL		$190,019,778.05

LIABILITIES

Capital	$ 4,090,000.00	
Surplus	6,310,000.00	
Undivided Profits	5,545,551.68	$ 15,945,551.68
Reserve for Contingencies		1,339,406.35
Reserve for Expenses, Taxes, etc.		1,424,504.83
Acceptances and Letters of Credit		317,259.61
Accounts Payable, Unearned Interest, etc.		1,011,854.96
Deposits (*Including U. S. Treasury Tax and Loan Accounts)		169,981,200.62
TOTAL		$190,019,778.05

*U. S. Treasury Tax and Loan Accounts . . $ 2,191,752.23

Assets Pledged to secure Public Funds (including U. S. Treasury Tax and Loan Accounts), Trust Balances and Other Liabilities as required by law . $ 19,241,938.02

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Chairman
Finance Committee
The Coca-Cola Company

WILLIAM S. WOODS
President
Trust Company of Georgia
Associates

S. R. YOUNG
Director
Atlanta & West Point
Railroad Company

News in Brief

High-Denier Yarn for Webbing. Tests made by R. J. Neff of Phoenix Trimming Co. for the U. S. Air Force indicate that 840-denier nylon yarns make at least as good webbing as the 210-denier yarn currently specified. Results

also show that piece dyeing of the webbing is desirable. The study is described in detail in a 68-page publication, PB 121463, available from the Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C., for $1.75.

Cotton Council Asks Import Limit. The president of the National Cotton Council, F. J. Beatty, of Charlotte, N. C., has called on Administration leaders to take immediate action to limit imports of foreign textiles. Said Mr. Beatty in telegrams to the President, Secretary of Agriculture, and Presidential Assistant, "Unless this situation is dealt with adequately, the raw cotton industry has no alternative but to seek remedial action through legislation."

Engineers' Pay Up. A survey by the American Management Association shows that engineers and other professional employees in American industry earned 8.6% more in 1956 than they did in 1955. Median salary for engineers with

less than a year of experience was $5,300 per year during the period covered by the survey; those with one to three years' experience earned $6,500. However, engineers and scientists are much less likely to receive bonuses than are members of "middle" management.

Materials Handling Conference. A conference on materials handling will be held in conjunction with the National Materials Handling Exposition at Philadelphia's Convention Hall on April 29-May 3. Both events, sponsored by the American Material Handling Society, will have as their theme, "Materials Handling, Key to Automation."

Sales Up, Profits Same. High employment and an estimated three per cent rise in disposable consumer income visualized for 1957 provide a favorable background for textile distribution, says the *Value Line Investment Survey*. However, despite the prospect for a moderate upturn in both unit and dollar sales, no marked improvement in profits appears likely. A modest increase in profit margins should occur over the next three to five years as the industry's productive capacity is brought more nearly into line with demand, by declining spindlage and increasing population.

Mayor Asks Import Aid. Mayor William C. Johnston of Anderson, S. C., has sponsored a resolution to the American Municipal Association, asking for its support in getting the Administration to act promptly to stem the flood of foreign-made textile products into this country.

World Fiber Consumption Up. Average per capita consumption of cotton, wool, and rayon (including acetate) was 9.6 pounds in 1954, an increase of 3% over the 1953 figure, according to figures originally compiled by the Food and Agricultural Organization of the United Nations. Only 10 of the nations of the world consume more than 20 pounds of textile fibers per capita annually (the United States uses 33.3 pounds); 18 countries consume 10 to 19.9 pounds, and the remaining 42 nations have an annual per capita consumption of less than 10 pounds. Figures for the various continents are given in an accompanying table.

Japanese Promote in Africa. A Japanese trade mission sponsored by the Osaka Prefectural Board of Trade and the Japan Export Trade Research Association is currently

on a four-month's tour of Africa, from Cairo to Capetown. Trade fairs and other means of promoting Japan's exports to the Dark Continent are on the agenda.

European Cotton Promotion. Representatives of nine European countries and the U.S.A. met recently in Montreux, Switzerland, to discuss market research and sales promotion for the European cotton textile industry. Delegates were in agreement on the need for general promotion of cotton, as compared to promotion of specific items. Increased research into consumer habits is needed, the cotton men agreed. Extensive campaigns are under way or planned in many Western European countries, with technical assistance provided by the National Cotton Council.

Pounds Per Capita Fiber Consumption, 1954

Continent	Cotton	Wool	Rayon*	Total**
North America	23.2	2.6	6.4	32.3
Western Europe	9.7	3.3	4.2	17.2
Eastern Europe & USSR	8.6	1.3	2.4	12.3
Central & South America	6.4	0.9	1.5	8.8
Asia	4.2	0.2	0.7	4.9
Africa	3.3	0.4	0.9	4.5
Oceania	10.3	6.6	3.7	20.7
World Average	6.8	0.9	1.8	9.6

*Including acetate
**Because of rounding of figures, separate items may not add to totals shown
Source: *World Wool Digest* and *Textile Organon* from figures originally compiled by Food and Agricultural Organization of the United Nations

*Our prospective buyer has okayed Comer's appraisal...

Comer's appraisal is a key to satisfactory sale or liquidation of mill properties. For one machine or an entire mill, more and more mill men are calling on Comer's 24 years of experience serving the industry. Available to you at no obligation is this same knowledge and experience that has been the deciding factor in so many important mill transactions involving millions of dollars.

Sales ★ Purchases ★ Liquidations ★ Mergers ★ Fair Appraisals ★ For immediate action . . . contact

*Excerpts from records of actual transactions handled by Comer.

COMER

Machinery Company

680 West Peachtree St., Atlanta 8, Georgia • TRinity 5-5682
5236 Wilkerson Blvd., Charlotte, N. C. • EXpress 9-5606

AN EXECUTIVE Views

THE NEWS IN TEXTILES

Prepared by a man who is closely identified with the textile industry

Sell textiles on TV?

IN THE December 1956 issue either one of your editors or one of your readers was bemoaning the fact that the battle of the fibers has become so intense and in the fashion of a mud-slinging political campaign that the textile industry has practically forgotten how to sell its products to the public; the industry has become engrossed in a battle of its own, and it is a battle in which the public is not the least bit interested.

Your correspondent evidently referred to the advertising campaign that was instigated sometime back by the National Cotton Council. In this campaign, the Council pointed out the good qualities of that very fine fiber, cotton, but the Council's approach was one that left a bad taste in everyone's mouth. Instead of just telling the good qualities of cotton, the shortcomings of the other fibers were emphasized.

One of the best ways to lose a sale and lose the confidence of the public is for one branch of our industry to start knocking another branch; or for one fiber to start knocking another. If you can recall the advertising program of the big cigarette companies several years ago, you will remember that they advertised such things as no coughs, no bites, no headaches, etc., that each cigarette did *not* cause. They all advertised so many disagreeable things that their particular brands didn't do from the standpoint of health, that the general public began to wonder just how much damage *any* cigarette did to the smoker.

The societies and medical men who were against smoking were quick to take advantage of the doubt that the cigarette companies created, and there followed some very adverse publicity against tobacco in general and cigarettes in particular.

In other words, the campaign of advertising which was supposed to sell more cigarettes, probably cost the tobacco companies much more than it was worth. At least it caused them to sit up and take notice of the type of advertising which they were putting out. You will notice the change in the tobacco advertising of today.

But people don't learn too fast. Even before the detrimental advertising of the tobacco companies several years ago, one company advertised to reach for its cigarette instead of a sweet. The candy companies didn't like that par-

Comments on This Article

Editor's note: Before publication, this article, proposing a "textile hour" on TV, was shown to several people. Some of the comments follow. Readers are invited to send their opinions of the proposal to the editors.

". . . . the idea of having a radio and television hour is a sound one. However, textile folks are so busy cutting one another's throats that they never could get together on any kind of a program. At least, they never have . ."

". . . the National Cotton Council is not engaged in a 'battle of the fibers' . . . the Council only presents the facts about cotton . . . if the facts leave a 'bad taste' in someone's mouth, then any truth would leave a bad taste . . . besides, television time costs money . . . do not use my name . . ."

". . . the television program might prove beneficial to our industry . . . steel has a program, the big automobile companies sponsor a program . . . how about a weekly program called 'the textile hour' . . ."

". . . if Japanese textiles are a blessing in disguise, and following the idea of raising a monument to the boll weevil, why don't we have a monument to Hitler—he pulled textiles out of the dumps by starting a war . . . still, if we can sell textiles by television, let's try it . . . by the way, who will raise the money . . ."

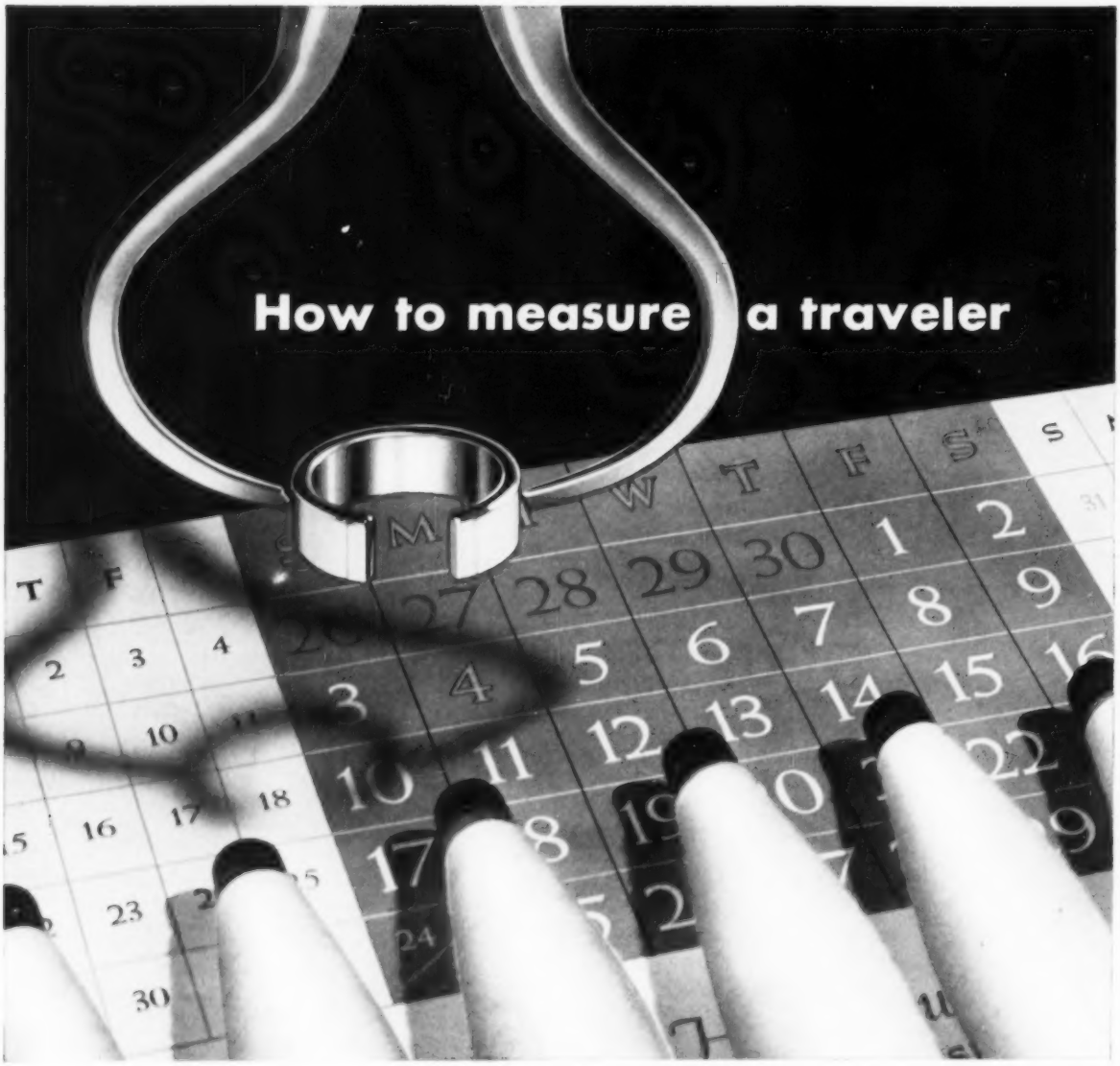
". . . your correspondent is well versed in the Japanese cotton cloth situation . . . wonder if he spent his time in Washington or Worth Street last year . . . some good may come of his television idea . . . it couldn't hurt anything . . ."

". . . absurd . . . our mill is sold well ahead . . ."

". . . cigarettes are not good for people, and it is time a magazine of your standing brought it out in the open for industrial employees . . . no telling how many days of lost time can be attributed to cigarettes . . ." (Editors' note: We think this one may have missed the point.)

". . . I am for anything that will sell goods . . ."

". . . Mr. —— is away from the city, but as his secretary for a number of years I feel certain that he will give the matter every consideration upon his return . . . you may expect to receive his conclusions in the near future . . ."



Measure a traveler by days of trouble-free service, and by pounds of first-quality yarn delivered. Travelers vary widely by this test, even though they *look* alike and meet dimensional specifications.

Under *any* conditions, you can be sure of maximum production per traveler when you rely on Victor experience and quality control.

That's the reason why Victor Travelers are chosen for over 12,000,000 spindles. Mill men everywhere find that Victor quality pays off, consistently, in longer traveler life . . . with fewer ends down . . . at higher spinning and twisting speeds.

A Victor Service Engineer will help you select Travelers that measure up to maximum production on any yarn you are running. Write, wire, or phone for prompt service.

Keep a Step ahead with

VICTOR Ring Travelers

VICTOR RING TRAVELER COMPANY

PROVIDENCE, R. I. . . . 20 Mathewson Street . . . . . Tel. DExter 1-0737

GASTONIA, N. C. . . . 914-916 East Franklin Ave. . . . Tel. UNiversity 5-0891

ticular ad. All of a sudden the "reach for a cigarette instead of a sweet" campaign disappeared from the sign boards, from the magazines, and from all other advertising.

It's a pretty good bet that the candy companies got together and explained to the cigarette company that either this type of advertising had to stop, or the candy companies had an excellent story to tell in their advertising, and it wouldn't be one that the tobacco companies would like.

BY THIS TIME someone or some several have probably already pointed out to the National Cotton Council the inadvisability of continuing to run advertising copy that is detrimental to any other fiber.

In the first place, it is not good business to knock the other fellow. In the second place, it creates doubt in the minds of the public, as your correspondent pointed out, so that the public never knows what to believe about what anyone advertises. And in the third place it only shows that King Cotton and the people who promote it are literally scared to death.

I have a proposal to make that concerns the selling of more textiles, but first let's look at our general textile picture and some of the ways that we have been spending our time in the last year.

At a number of conventions the speakers have pointed out that consumers are spending more money than ever before, and that this money is going into types of goods other than textiles. In short, the textile industry just isn't getting what it thinks is its fair share of the increase in spending. Of course, nothing is said about the fact that the hard goods — refrigerator, electric stove, automobile, and gadget manufacturers — have done a selling job.

Pick up any newspaper, any magazine, or notice any billboard along the highway, and all you see is advertising that creates a desire and sells. The radio and television programs are supported by companies and industries that have something to sell, and they are out selling their products.

What does the textile industry do? It sits back and turns out its products as fast as it can, irrespective of supply and demand, often creates a surplus, and then complains that the consumers don't buy as much of its stuff as they should.

And while every other industry is out selling goods as fast as it can and devoting its energy to creating a market, what does the textile industry do?

It has the best brains and energy in the industry spending untold time trying to stop Japanese goods from coming into this country.

(Continued on page 261)

Date	Event	Location
Feb. 16	Mid-West Section AATCC	Hotel Bismarck Chicago, Ill.
25-27	Textile Quality Control Conference	Georgia Tech Atlanta, Ga.
27-28	Cotton Research Clinic, sponsored by National Cotton Council	Gen. Oglethorpe Savannah, Ga.
Mar. 1	New York Section AATCC	Hotel Delmonico New York City
14	Southern Textile Methods and Standards Association	Clemson House Clemson, S. C.
14-15	Textile Research Institute annual meeting	Hotel Commodore New York City
15	Niagara Frontier Section AATCC	Buffalo, N. Y.
28-29	Textile Quality Control Association	Clemson House Clemson, S. C.
29	Hudson-Mohawk Section AATCC	Johnstown, N. Y.
30	Piedmont Section AATCC	Hotel Roanoke Roanoke, Va.
Apr. 4-6	American Cotton Manufacturers Institute annual meeting	Biltmore Hotel Palm Beach, Fla.
8-11	National Packaging Congress and Exposition	International Amphitheater Chicago, Ill.
10-12	Alabama Cotton Manufacturers Association annual convention	Buena Vista Biloxi, Miss.
23-24	National Knitted Outerwear Association annual meeting	Waldorf Astoria New York City
24-25	ACMI Cotton Fiber Testing Laboratory Open House	The Clemson House Clemson, S. C.
25-27	Phi Psi Textile Fraternity annual meeting	New Bedford Hotel New Bedford, Mass.
29	Underwear Institute annual meeting	Traymore Hotel Atlantic City, N. J.
29-May 3	Knitting Arts Exhibition	Auditorium Atlantic City, N. J.
May 1-2	Fiber Society spring meeting	Clemson House Clemson, S. C.
1-4	Cotton Manufacturers Association of Georgia annual convention	Emerald Beach Hotel Nassau, Bahamas
30-June 1	South Carolina Textile Manufacturers Association annual meeting	The Cloister Sea Island, Ga.
30-June 1	Tufted Textile Manufacturers Association annual convention	Fontainebleau Miami Beach, Fla.
June 20-22	Southern Textile Association annual meeting	Ocean Forest Hotel Myrtle Beach, S. C.
Sept. 4-6	Fiber Society meeting jointly with members of Textile Institute	Hotel Statler Boston, Mass.
26-27	Combed Yarn Spinners Association annual meeting	The Cloister Sea Island, Ga.
Oct. 2-3	Chemical Finishing Conference	Hotel Statler Washington, D. C.
Nov. 14-16	AATCC National Convention	Hotel Statler Boston, Mass.

Inside Story on POWELL GATE VALVES

Gate Valves may appear similar on the outside. But their performance may be quite another story -- for there can be a big difference in the metal, in design and in manufacture. And the inside story on Powell Gate Valves is that every valve has PERFORMANCE VERIFIED.

Only the finest materials are used in Powell Gate Valves. And painstaking quality control is rigidly enforced through each step of manufacture. For example, every machining operation is accurately gauged. All parts are thoroughly cleaned and degreased. As a final step in manufacture, EVERY POWELL GATE VALVE IS GIVEN AN ACTUAL LINE TEST.

Because of Powell's painstaking quality control, plant shutdown through valve failure is practically unknown. Records from refineries, power and industrial plants the world over prove it.

Consult your Powell Valve distributor. If none is near you, we'll be pleased to tell you about our COMPLETE quality line which has PERFORMANCE VERIFIED.

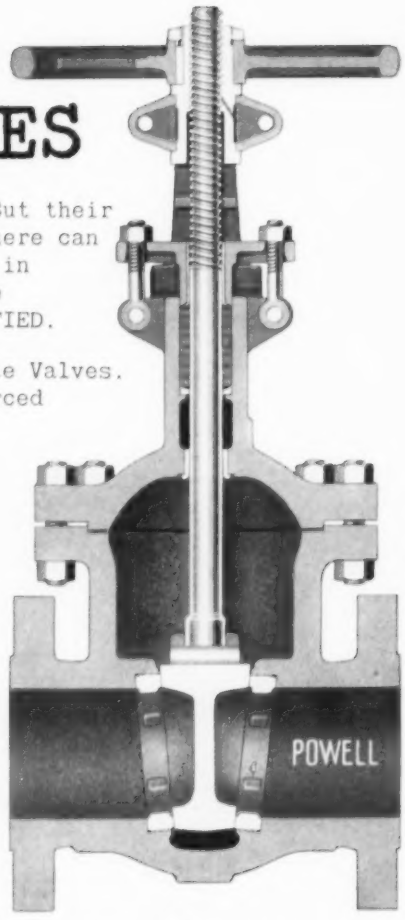
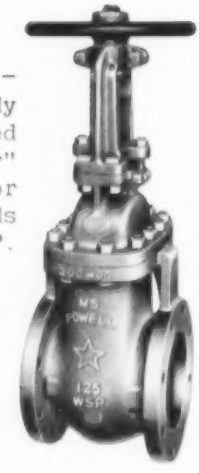


FIG. 3003 (Sectional) Steel Gate Valve for 300 Pounds W.S.P.

FIG. 500 -- Bronze Screwed-in Bonnet Gate Valve for 125 Pounds W.S.P.

FIG. 1793 -- Iron Body Bronze Mounted "Model Star" Gate Valve for 125 Pounds W.S.P.



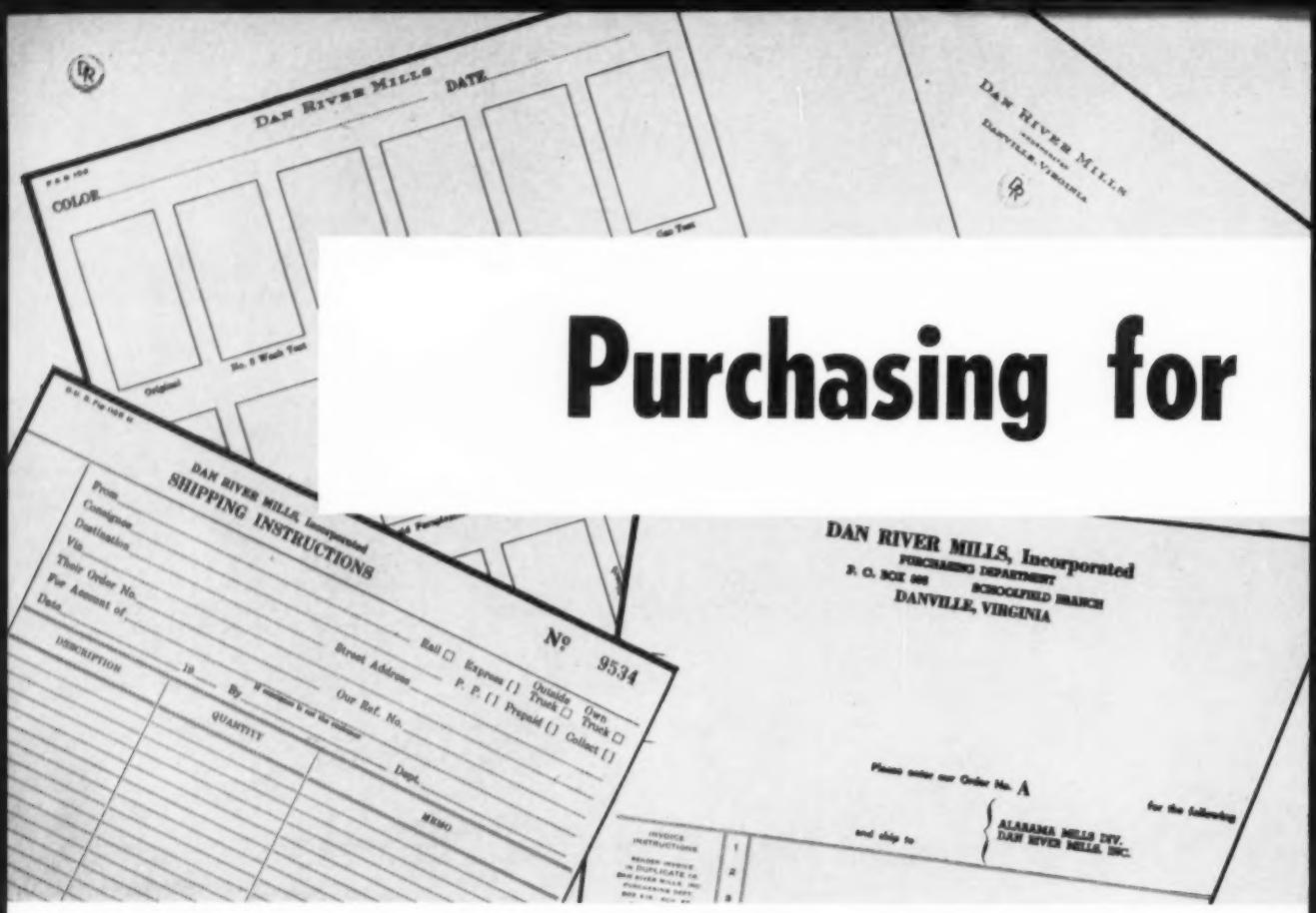
PERFORMANCE PV VERIFIED

The Wm. Powell Company, Cincinnati 22, Ohio . . . 111th YEAR

POWELL VALVES

BRONZE, IRON, STEEL AND CORROSION RESISTANT VALVES

PURCHASING-
1957
A BIN
LOCK PARTS NEW
B BIN
LOCK PARTS NEW
S
T
U
V
SARAN
SARAN
SARAN
Firestone



Purchasing for

Staff prepared Exclusive

LOOM PARTS and starch, gem clips and tractor-trailer trucks, coal and dyestuffs, — these are a few of the 50,000 or so items for which about 30,000 purchase orders were written last year at Dan River Mills.

For those who like statistics: If all the copies of the 30,000 purchase orders were laid end to end, they would reach from Washington to Baltimore, with enough left over to cover a football field up to about the 20-yard line. Or to put it another way, piled on top of each other they would make a stack as tall as a seven-story office building.

The purchasing department at Dan River Mills has the responsibility for seeing that materials, supplies, and equipment arrive in a continuous flow, to keep about 576,000 spindles and 12,000 looms running. In 1956, this required the purchasing department to spend about $20,000,000 for over 40,000 separate invoices.

But purchasing at Dan River does not mean just the simple act of buying. It includes a group of complex activities, in which the actual buying is just one step. It includes detailed evaluation of supplier sources, comparison of competitive products, development of efficient purchasing department procedures, constant study of market conditions and probable future trends, coordination of the activities of the purchasing department with the other departments of the company, and keeping top management informed of the purchasing and inventory situations.

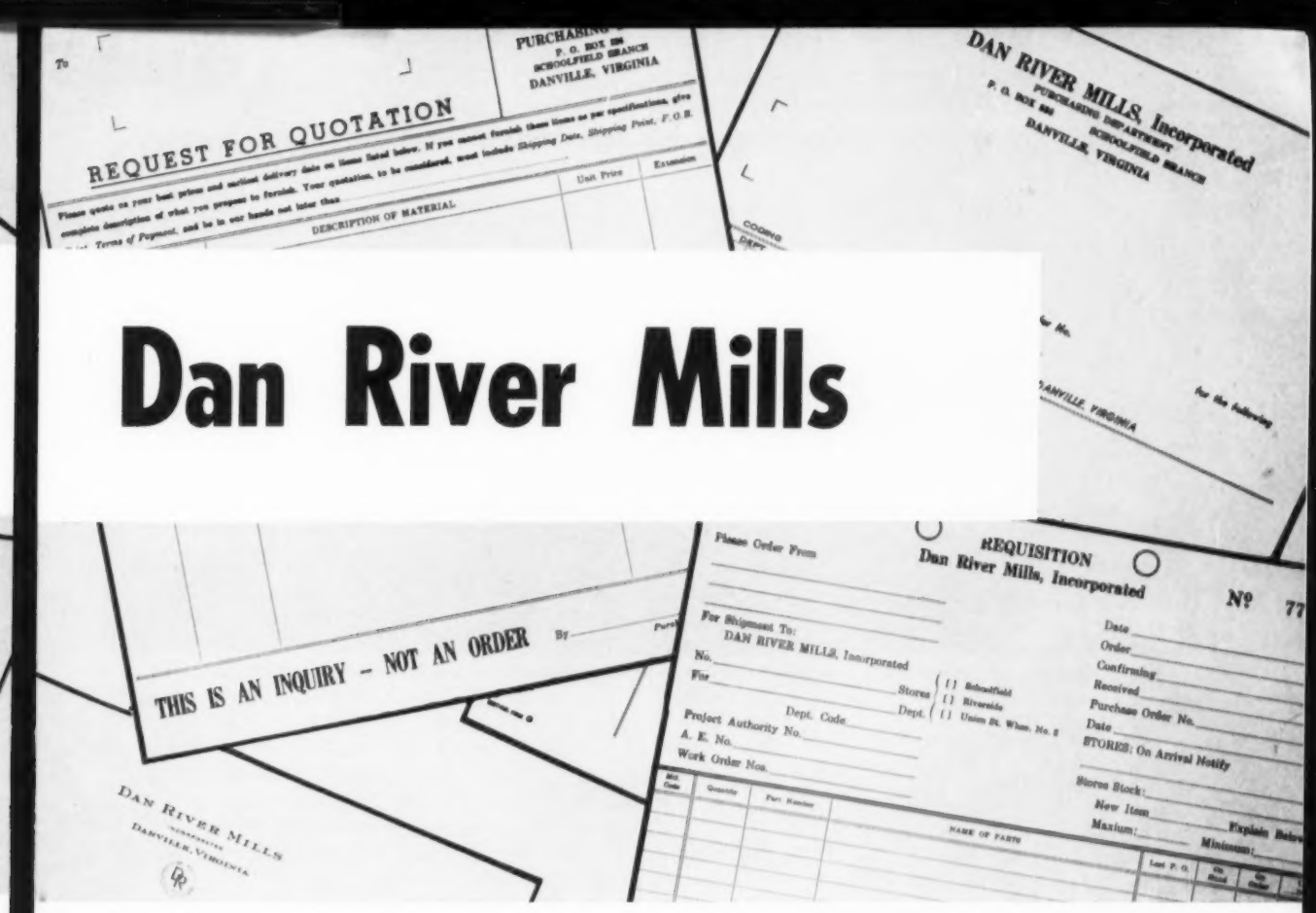
Here, then, is the story of purchasing at Dan River Mills.

OPERATION

DAN RIVER Mills' current annual purchases of over $20,000,000 are made by a purchasing staff of 12 — the director of purchases, the purchasing agent, three assistant purchasing agents, three stenographers, three clerks, and a receptionist. The organization of the purchasing department is shown in the chart on page 106.

Each buyer is assigned a group of products which he is in charge of purchasing. Assignments conform as nearly as possible to the production organization of the mill, with some exceptions to even the load on the buyers. One buyer handles all machine parts and supplies from the opening operation through spinning; another from weaving through put-up; a third handles heavy maintenance and construction; and a fourth is in charge of purchases of mill, office, and miscellaneous supplies. The director of purchases does all buying of dyestuffs, industrial fuels, and major machinery (which represent major dollar-volume purchases), and negotiates all long-term contracts.

The director of purchases has responsibility for purchasing all materials, supplies, equipment, and services used by the mill, except raw materials (including yarns), which are purchased by the vice-president of raw material procurement.



Dan River Mills

The method of distributing buying assignments not only makes each buyer an expert in his field, and minimizes lost motion, but also makes it possible in most cases for a salesman to call on only one of the buyers to cover his entire line.

It was the practice for a number of years to change buying assignments periodically. The present assignments will probably be permanent, with each buyer in his specialty, but each buyer is now familiar with all supplies bought by the mill and can fill in where necessary.

Although the number of purchase orders and invoices processed has increased by perhaps 20 per cent since the purchasing department assumed the buying for the company's recently acquired Alabama Mills division, there has been no increase in personnel, and it is not expected that any will be necessary. The present personnel have been able to assume the additional load.

The fact that the purchasing department has been able to assume additional responsibilities by increasing its efficiency rather than by increasing in size can be attributed to several things. Perhaps the most important is the very low personnel turnover rate in the department — the director of purchases and the four buyers have a combined service of over 50 years with Dan River Mills. Other factors are a constant drive for improved efficiency in the mechanical operations of the department; for example, by elimination of as much paper work as possible, and by placing blanket orders for standard items ordered frequently (to be described later). During the past year the purchasing department has moved into new quarters designed for increased efficiency.

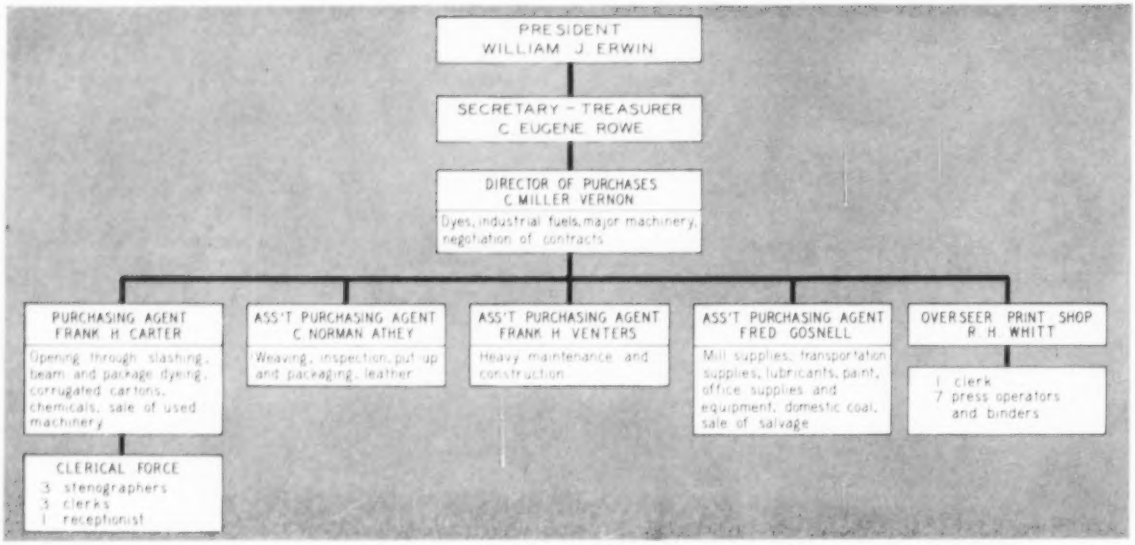
THERE IS no written statement of purchasing department operation and policy for use within the department — there is no need for it in this closely knit organization, with its low personnel turnover. There is a section on purchasing in the over-all company policy manual, principally for the guidance of persons preparing requisitions.

A purchasing manual is to be prepared, however, because of the acquisition of Alabama Mills and the desirability of informing personnel at this new division concerning operation of the purchasing department.

A sizable portion of the buyers' time, about 20 per cent, is spent interviewing the 6,254 salesmen who called at the purchasing offices in 1955, and the 6,400 or so who called in 1956. Tuesday, Wednesday, and Thursday are the days when most salesmen call, because of the location of the mill.

Salesmen are not kept waiting unnecessarily to see a buyer. The director of purchases receives a daily list of all salesmen who call at the mill; the names of those who had to wait for more than 20 minutes are underlined in red.

A weekly list of the salesmen seen by each buyer is submitted to the director of purchases. If the balance among buyers is significantly off over a period of time, some products are switched from


PRESIDENT
WILLIAM J. ERWIN
SECRETARY – TREASURER
C. EUGENE ROWE
DIRECTOR OF PURCHASES
C. MILLER VERNON
Dyes, industrial fuels, major machinery, negotiation of contracts
PURCHASING AGENT
FRANK H. CARTER
Opening through slashing, beam and package dyeing, corrugated cartons, chemicals, sale of used machinery
CLERICAL FORCE
3 stenographers
3 clerks
1 receptionist
ASS'T PURCHASING AGENT
C. NORMAN ATHEY
Weaving, inspection, put up and packaging, leather
ASS'T PURCHASING AGENT
FRANK H. VENTERS
Heavy maintenance and construction
ASS'T PURCHASING AGENT
FRED GOSNELL
Mill supplies, transportation supplies, lubricants, paint, office supplies and equipment, domestic coal, sale of salvage
OVERSEER PRINT SHOP
R. H. WHITT
1 clerk
7 press operators and binders

Organization of the purchasing department at Dan River Mills, showing commodities assigned to each buyer.

one buyer to another.

Salesmen are not restricted to any certain hours in their calls on the purchasing department, although it is *preferred* that they restrict them to 9:30 AM to 3:30 PM, to permit work to be assigned to the clerical staff in the morning, and to allow time for signing mail, purchase orders, and the like in the afternoon. However, the director of purchases and the buyers are glad to see salesmen even outside the preferred hours, if there is obvious good reason.

For routine visits, salesmen are asked to call at the purchasing office only once in 30 days, and a record is kept of the dates on which each salesman calls. Suppliers have in most cases expressed satisfaction with the 30-day restriction; those who formerly called more often usually did so not through choice, but to keep up with competition — a vicious circle.

Technical salesmen who have something to offer, and who would not be just wasting the mill men's time, are allowed to enter the mill. Salesmen must call on the purchasing department first, and not contact the mill man directly.

The purchasing department determines if the salesman has a valid reason for wanting to talk to the mill man, determines if the mill man is interested in seeing the salesman, and then gets approval from mill supervision at the division superintendent level.

Salesmen are free to call on the Research and Development division of the company without clearing through the purchasing department.

The vice-president and general superintendent is given a report by the purchasing department each six months, listing the number of salesmen who went into the mill, and on whom they called.

In addition to the time spent actually interviewing salesmen, the four buyers spend a great deal of time on the phone — they each average a total of about 100 phone calls a day, outgoing and incoming.

The bulk of the remainder of the buyers' time is spent working their requisitions, initiating purchase orders, and one weekly follow up of orders. Few formal meetings of the buyers are held — usually an average of one a month.

The buyers are frequently out in the plant — among them, several hours a day are taken up in the mill. Salesmen are sometimes accompanied to the mill by the buyers; for example, to investigate a complaint.

THE DIRECTOR of purchases has one more-or-less unrelated department under his supervision — the mill print shop. This shop prints most of the forms and other printed matter used by the mill, and miscellaneous items such as salesmen's sample books. It does no fancy work — multicolor or "snap-outs," for example.

The print shop is, with one possible exception, the largest operation of its kind in Danville, and effects important savings, compared to having the same material job-printed outside. In addition to the savings realized, there is also a service advantage, since time is not wasted in expediting rush jobs, and there is no danger that a clerical department will be shut down for lack of forms.

There is close coordination between the purchasing and traffic departments. The latter department, which reports to the vice-president of raw material procurement, routes all purchase orders, and when convenient and economical, arranges for handling by the company's own trucks.

Another duty of the purchasing department is the sale of all scrap, used machinery, and obsolete and surplus supplies. It is company policy that the mills and warehouses be kept as free as possible of these materials, and replaced or scrapped machinery is disposed of as quickly as market conditions will permit.

PROCEDURE

THE PROCEDURE used in purchasing at Dan River Mills is uniform for all supplies, material, equipment, machinery, services, or other items except raw materials and those sufficiently minor that their purchase can be made from a petty cash fund.

The procedure used in preparation, approval, and handling of purchase requisitions is spelled out in detail in the company's policy manual.

All purchase requisitions are made on a standard form, which is prepared in four copies. For nonstocked items, the requisition is prepared by the department which needs the material or service. It is signed by the person originating the request, and by the department overseer if the originator is below that level. (Nonstocked items include those replaced on a cycle — bobbins, quills, spindles, synthetic aprons, cots, etc. — and general supply items purchased locally.)

Requisitions for stocked items originate with the storekeepers when the ordering point for a particular item is reached.

During 1956 the purchasing department moved into new quarters designed for increased efficiency; l-r: Juanita Elliott, secretary to buyers Carter and Athey; Kathleen Jeffreys, secretary to the director of purchases; Lorraine Turner, pricing clerk; Ella Baucom, invoice clerk; Joyce LaPrade, file clerk; and Martha Ann Earles, secretary to buyers Venters and Gosnell.

Requisitions for projects (to be discussed later) are made in the usual way, but the material called for must be listed in the project; otherwise, the project must be revised to include the additions.

Purchase requisitions for stocked items must be approved by the superintendent of the division concerned; and the first time that a requisition is entered for an item that will be stocked in the future, approval of the vice-president and

Dan River Mills

Dan River Mills, Inc., dates back to 1882, when six Virginians pooled their savings to start the Riverside Cotton Mills in Danville, Va., with initial capital of $75,000. With 2,240 spindles and 100 looms installed, the mill began to produce yarn and cloth in early 1883.

In 1909, the company merged with the Dan River Power and Manufacturing Co., and the corporate name was changed to Riverside and Dan River Cotton Mills, Inc., under which the firm did business until the present name was adopted in 1946.

Shortly after the merger, the company began to diversify. The Riverside Cotton Mills were known primarily for plaids, and later for white goods, a staple commodity in most drygoods stores of that time. The first bleached sheeting was shipped in 1908, and chambray the following year.

A sewing room was added in 1910, permitting the shipment of finished sheets and pillow cases. Ginghams were added to the mill's line in 1911; the name "Dan River" is now synonymous with top quality ginghams.

More consumer fabrics were added in the 20's and the 30's, and in recent years more than 50 per cent of sales have been in fabrics which carry the Dan River label at the consumer level.

Dan River's latest expansion came in mid-1956, with the acquisition of Iselin-Jefferson Co., and its subsidiaries, Iselin-Jefferson Financial Co., Inc., and Woodside Mills, Inc. The assets of Alabama Mills, Inc., and its subsidiary, Anchor Rome Mills, Inc., were also acquired at the same time.

These acquisitions brought further diversification to the company's lines. In addition to its own production of dress goods, shirting, decorative fabrics, sheets and pillow cases, work fabrics, and sales yarn, the company has added Alabama Mills' output of corduroy, sheetings, jeans, drills, twills, sateens, and others, and the industrial and decorative fabrics produced by Anchor Rome Mills. Woodside Mills is an important factor in the manufacture of print cloths, tricot, and synthetic fabrics.

Dan River Mills and subsidiaries (including Woodside Mills) have more than 800,000 spindles and 18,000 looms. With the recent acquisitions, total assets were raised from about $71,000,000 to about $132,000,000. Employees total almost 18,000.

The director of purchases at Dan River Mills assumed charge of all purchasing for Alabama Mills in mid-September, and of purchasing for Anchor Rome Mills in January.

Buyers' easy-access offices are separated by translucent glass partitions.

general superintendent or the superintendent of finishing must be secured.

Requisitions for nonstocked items, and for new items costing $500 or less, must also be approved by the general superintendent or the superintendent of finishing. (New items costing more than $500 require the same approval as projects.)

After the necessary approvals have been obtained, two copies of requisitions originating in the mill are forwarded to the manager of supply control, who determines if the item required is available from another division, or if it is in surplus or obsolete stock.

One of the 6,400 salesmen who called on the purchasing department in 1956 is escorted into the office of C. Miller Vernon, director of purchases, by secretary Kathleen Jeffreys.

WHEN the requisition arrives at the purchasing department, it is stamped in and priced (usually by entering the price paid the last time the item was ordered) by the pricing clerk. At the end of the day, the director of purchases gets all the requisitions received during the day, approves them, and assigns them to the appropriate buyers, who have full responsibility for obtaining the best price, quality, etc.

Purchase requisitions for items of a capital nature, for purchases applicable to projects, or for items of an unusual or nonrecurring nature are forwarded to the accounting department before a purchase order is prepared, to determine that authorized amounts have not been exceeded and to take necessary steps to obtain project authorities where needed.

The buyers initiate and sign the purchase orders, after which the eight copies are distributed as follows:

Original and 8th (acknowledgment): vendor
2nd: purchasing department; filed by vendor's name
3rd: division storekeeper where requisition originated (even if the requisition originated in the using department)
4th: purchasing department; filed numerically
5th: accounts payable department
6th: purchasing department; filed by commodity
7th: supply control

A copy of each purchase order for the day before is reviewed by the director of purchases, to keep posted (not to check on the buyers).

Open orders are filed according to the buyer who worked them. Each buyer thumbs through his file on a regular basis, to check on orders which are past due. A late order may be called to the attention of the buyer by the storekeeper or the using department if stocks are low or the item

is urgently needed.

For routine orders, suppliers are reminded of past-due shipments by a form letter asking that a check be made of the reason for the delay and a prompt reply made to the purchasing department. Where the need for the item is urgent, a phone call is made or a telegram sent. Although follow-ups by phone or telegram can become a considerable item of expense, they are still cheap compared to the cost of having machinery shut down because of failure of supplies to arrive. This is particularly true of the finishing department, where one machine represents a large output.

Obviously, the lower the inventory position maintained, the more necessary and the more frequent follow-ups become.

RECEIVING and inspection are under the supervision of the storekeepers in each division, both for stocked and nonstocked items. The stores are not supervised by the purchasing department; each store reports to the superintendent of the division in which it is located.

A copy of the receiving report goes to the finance department, where it is matched with the corresponding purchase order and invoice. The purchasing department does not receive a copy of the receiving report, but is informed by the finance department if a shipment is not received in a reasonable time.

The invoice is another check which the purchasing department has on the receipt of shipments. Each invoice as received is compared by the purchasing department with the corresponding purchase order, and is coded with a product classification number — all similar products have the same code number (used for inventory control).

Use of a code number for related products reduces the number of items in the inventory list from over 45,000 to about 200 to 225. The director of purchases, for his own use, consolidates the list still further, to about 40 items which he can easily keep his finger on.

The invoice goes from the purchasing department to the accounts payable department, where it is matched with the corresponding receiving report from the store concerned. Accounts payable figures the cash discount, types the voucher, and forwards it to the banking department, where the check to the supplier is issued.

The purchasing department is continually working to reduce to the absolute minimum the tremendous amount of paper work required to process about 30,000 purchase orders a year, with all their accompanying requisitions, requests for bids, and other forms. Some of the steps already taken include elimination of posting each purchase order in a ledger (replaced by the commodity file copy of the purchase order), buying of routine items by blanket orders, and discarding of the acknowledgment copy of the purchase order if the shipment is received first.

WHICH SUPPLIER?

THE DIRECTOR of purchases at Dan River Mills is given full authority to exercise his own best judgment in determining from which suppliers it will be to the mill's greatest advantage to buy. He is authorized to weigh the factors of quality and quantity, service and delivery, price, and other considerations, and to determine in each case which supplier pre-

The Purchasing Department Saves Money

Here are some recent instances in which the purchasing department, in cooperation with research and production personnel, saved money for the company:

A lubrication engineer was called in to make a study of a top roll oil which resulted in substitution of an equally satisfactory oil at 33¢ cents less per gallon, plus tax. This same oil is also used in bottle oilers in the weave room, and has been standardized throughout the company's mills.

Shipping costs were reduced by changing from 50 per cent caustic soda to 73 per cent caustic soda.

A new-type easy-open carton for a packaged product was substituted for a package with a tear tape. Estimated savings are $7,000 to $10,000 annually.

Two different dyestuffs were used in two dyehouses to produce the same shade; one was 10 per cent less money value than the other. The dyestuff with the better money value was standardized on for both dyehouses, with a minimum annual saving of $15,000.

All supplies, equipment, and fuel used by Dan River Mills are bought by these men: l-r: Frank H. Carter, purchasing agent; Fred Gosnell, Frank H. Venters, and C. Norman Athey, assistant purchasing agents; and C. Miller Vernon, director of purchases.

Supplies are received, checked, and inspected by storekeeper Jack Rice in the division for which the supplies were purchased. Stores are no longer under the supervision of the director of purchases; they report to the superintendent of the division in which they are located.

Requisitions for stocked items originate with the division storekeepers when the ordering point for a particular item is reached. Here stores clerk checks Kardex file for information in preparing a requisition.

sents the best balance.

Sometimes, of course, there is no question of deciding on a source of supply — the product required may be made by only one supplier, or the item may be so minor and the suppliers of it so much alike in their operations that any detailed evaluation of possible sources would not be worthwhile.

Past experience is the most important consideration in selecting a supplier, either for a repeat order or for determining the best source for a new item. The great bulk of the products used by the mill are bought time after time, and a supplier who has given good service in the past is likely to do so in the future. However, no supplier has a proprietary interest in the mill's account, so other sources are continually being evaluated.

By the same token, when the mill needs a product not normally purchased, it is logical to go to one of the regular suppliers of other items as a source, if any of them have it in their line.

Suppliers whose salesmen call on the mill regularly are given preference. It is appreciated when suppliers think enough of the mill's business to work to get it, and better service can be expected from them.

Local purchases are favored when the mill can buy without penalty — Dan River buys about half a million dollars worth of supplies a year from local merchants and suppliers. In addition to cementing good relations with the community, better and faster service can often be obtained from local suppliers.

The advantages of small versus large suppliers are balanced. Dan River does not necessarily give preference to large suppliers, but a supplier is expected to have sufficient reserve capacity to meet his commitments, and to have a technical and research staff able to improve products and processes and be of service to the mill.

Dividing of purchases is usually done by mill divisions — one supplier's product is used throughout a division, for standardization and for economy in purchasing and inventory.

Standard items used in large quantity (nuts, bolts, screws, V-belts, for example) are bought on contract, blanket, or "set-up" orders, usually negotiated for a period of six months, with price protection in most cases guaranteed for 30 days. Shipping instructions are issued against the blanket order.

The advantages of the blanket order are saving of the buyers' time by eliminating negotiation each time an order is placed; and, since the supplier can better estimate his sales for the coming peri-

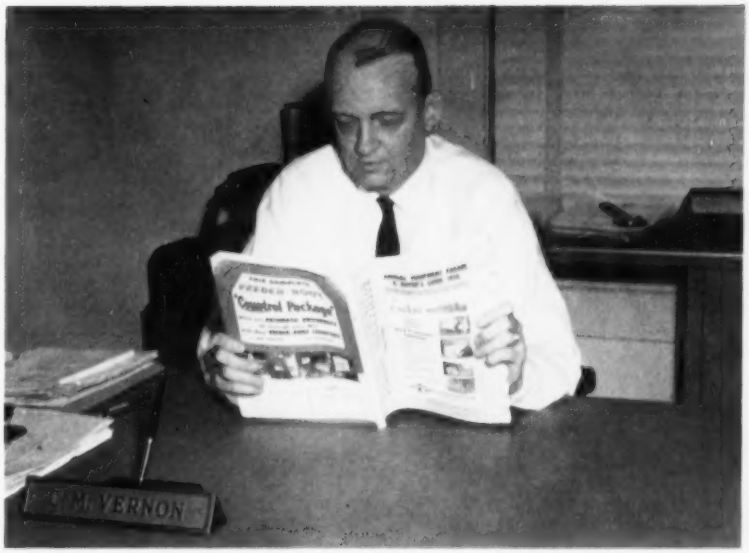
od, he can offer the mill a better price. In addition, telephone orders may be placed against the blanket order.

Bulk chemicals (caustic soda, soda ash, etc.) and coal are bought on annual contracts, which are usually negotiated in December. The various suppliers of the contract items are asked to submit bids, and negotiations are conducted between Dan River's director of purchases and top officials of the supplier companies.

The purchasing department has numerous sources for locating suppliers of a product which the mill has not bought before, or for which new suppliers are wanted. These include buyers' guides, catalogs, Thomas' Register, McRae's Blue Book, and an extensive file of major city telephone directories (suppliers are first checked through Dun & Bradstreet).

Suppliers with whom the mill deals regularly are sometimes asked to recommend a source of supply for an item which they do not have in their line.

The director of purchases keeps up with new developments in textile processing and in the purchasing field through his continual contact with salesmen; by reading publications in the trade journal field, purchasing journals, and the *Bulletin* of the National Association of Purchasing Agents; by visits to other mills (although most of these visits are made by technical department personnel); by visits to suppliers' plants; by membership and activity in the Carolinas-Virginia Purchasing Agents Association, affiliated with the NAPA; and by attendance at textile shows. He also reads numerous dailies, weeklies, and monthlies in the trade and general business fields.



Buyers' guides, catalogs, and directories are among the sources used by C. Miller Vernon, director of purchases, to locate suppliers of products not bought by the mill before, or for which new suppliers are wanted.

The mill print shop, with one possible exception the largest in Danville, is under the supervision of the director of purchases.

ON ROUTINE requisitions for stocked items, the storekeeper notes the name of the supplier from whom the last purchase of the item was made. This information is of course available from the file of purchase orders, but having the storekeeper note it on the requisition saves time in the purchasing department.

The idea or desire to try a new product may come from either the purchasing department or the mill. The purchasing department often gets its first word of new developments from salesmen. If the product is considered worth trying in the mill, the central technical department is informed, by letter or by pertinent literature, or the salesman may be sent to the mill to tell his story and demonstrate his product.

Since the mill man does not see nearly as many salesmen as do the buyers, he is more likely to hear of new developments through articles or advertisements in trade magazines, or at technical meetings. Other sources of information on new ideas are informal meetings with other mill men (Dan River supervisors visit other mills, and men from other mills visit

The director of purchases keeps top management informed of market conditions and probable trends, as well as of the operation of the purchasing department; l-r: Basil D. Browder, executive vice-president; C. Miller Vernon, director of purchases; C. Eugene Rowe, secretary and treasurer; Roy M. Stephens, vice-president and general superintendent; Harley Y. Jennings, director of research.

Dan River), and textile shows such as the one held last fall in Greenville.

The research department is often the first to hear of new developments in the field of dyes and chemicals. If the purchasing department learns of a new chemical development, the research department is informed, or the salesman may be sent to tell his story to the director of research.

SAMPLES are not accepted if the purchasing department and production people are not interested in the product; therefore, all samples accepted are actually tested.

If the sample is applicable to the grey mill (production machinery or parts, mill supplies, etc.) it is turned over to the technical department for testing. If it is a dye or chemical, it is turned over to the research department.

The technical department arranges for and supervises the necessary mill tests and observes results, in cooperation with production personnel concerned. The technical department reports monthly in bulletin form to the vice-president and general superintendent on all tests made; copies of this report go to division superintendents and assistant superintendents, technical superintendents, director of purchases, and others interested.

Samples are paid for only if they were requested for information purposes — if the mill has no definite plans for putting the product into production. Trial quantities large enough for a mill run are paid for at the rate at which the product will be purchased if found acceptable — i.e., one drum is paid for at carload rate if a carload will be the quantity normally purchased.

MAJOR EQUIPMENT purchases are decided upon by top management officials, including Dan River's president, W. J. Erwin, according to the amount of money available for plant improvement and modernization. In 1955, Dan River invested almost $3,000,000 in new machinery, primarily for improved spinning, and new combing, spooling, winding, and beam and package dyeing machinery. Expenditures for new machinery are estimated at $3,000,000 for 1956, and should continue at a substantial rate for the next few years.

After the decision is made, the plant engineer and technical superintendent of the division concerned prepare a project, which is submitted through the division superintendent to top management for approval.

The purchasing department first comes into the picture by assisting the engineer and technical superintendent in making preliminary estimates of the cost of the project. Then after the project has been compiled, the price information is verified. When the project has been approved, the purchasing department does the actual buying.

The usual requisitions are used, listing the project number assigned as authority for the requisition. All purchases involved are charged against the project by number, and any material requisitioned must be listed in the project. If additional material is needed, the project must be revised to include it; any changes must be approved by top management.

Before a project is decided upon, a detailed study is made of the savings expected and the time estimated for amortization, by the production and standards departments. These projected savings are later checked against actual results, and management is informed of the facts.

QUALITY CONTROL

QUALITY CONTROL of purchased materials is an essential part of the purchasing program at Dan River, with a detailed procedure applied to control of dyestuffs and chemicals. Each drum of dyestuff received is checked by the research department for color value and for sediment, and chemicals are spot checked.

Color value is compared by dyeing test skeins with a sample of dye from each drum in a shipment, and comparing the dyed skein against a standard. Other tests made as necessary include measurement of the resistance of the dye to light, the No. 3 and No. 4 wash tests, dry and wet cleaning, gas fading, dry and wet pressing, acid and alkaline perspiration, hot and cold perchlorethylene, dry and wet crocking, and chlorine and peroxide bleaches.

Dan River's system of testing the color value of all dyestuffs shipments was started about five years ago. At the start of the program, about one-third to one-half of all shipments had to be returned to the dyestuffs companies. Returns now amount to only four or five lots a year.

However, the checking program must be continued. At one time it was felt that the testing of each lot could be discontinued, but after about six months it was found necessary to resume testing of every drum as complaints from the dyehouse began to mount.

The amount of sediment in each drum of dyestuff is determined by filtering a measured quantity of the dye. The sediment content of dyes is critical for package dyeing; the packages act as filters for the undissolved particles, which appear as spots in the finished product. Occasionally it is necessary to reject a shipment because it contains too much sediment for package dyeing, although it might be satisfactory for piece dyeing.

All dyestuffs purchased must be on an approved list compiled by the research department; a dyestuff "makes" the list only after a satisfactory showing in the tests described above. There is a similar list for chemicals.

The mill may requisition a sample drum of a dyestuff or chemical which is not yet on the approved list, but any orders after the first may be made only after the product has been tested and approved by the research department.

Complaints on the performance of dyes and chemicals are usually made by the using department directly to the research department.

Most supplies other than dyes and chemicals are checked visually as received, and of course their performance in production is noted. The technical department checks

Every drum of dyestuff received at Dan River Mills is tested for color value. Skeins in the foreground were dyed for comparison against a standard for strength. The disks of filter paper are from tests used to compare a new lot against a standard for sediment. Fastness to light is tested in the Fade-O-Meter in the background. The girls are posting tests for dye formulas.

If tests in the physical testing laboratory show any defects or failure to meet specifications traceable to purchased materials, the results are referred to the purchasing department.

Cooperation between the purchasing department and the production departments is furthered by informal meetings of the director of purchases and production supervisors; l-r: W. D. Vincent, superintendent, Schoolfield Division No. 1; J. J. Carrick, Jr., superintendent, Riverside Division; C. M. Vernon, director of purchases; I. L. Payne, assistant general superintendent.

all spinning rolls for trueness, and all spinning rings are checked under the microscope.

Outside testing agencies are used only rarely, since Dan River has a large research department of its own. The Btu value of coal was formerly checked outside, but the mill now has the equipment to do its own testing. The octane rating of gasoline has been checked by an outside laboratory.

Large-scale tests of supplies and equipment are constantly in progress, to determine the best buy for the mill. Paint, bearings, shuttles, and shuttle fur and bristles are a few of the many items tested recently.

Looms, spinning frames, and other machinery are tested under actual mill conditions. These may be obtained on loan from the supplier, or may be purchased with option to return if not satisfactory.

MILL RELATIONS

COOPERATION with other departments of the company is an important, continuing program for the director of purchases. Liaison with production departments is mostly by informal meetings with production supervisors, whenever necessary but not on any regular schedule.

Cooperation on testing new products and investigating complaints about products is usually done by the director of purchases or by one of the buyers through the division technical superintendents.

In addition to the frequent informal reports made to production management, a report on machinery purchases is made every 90 days. A report on market conditions, with a market forecast, is made every 60 days to the secretary and treasurer, the immediate superior of the director of purchases.

Special reports are made to top management as the need arises; for example, if a price rise is slated for a major item, top management is informed, so that a decision can be made on forward purchasing of the item. On other than major items, the director of purchases makes his own decision as to stockpiling (he has a warehouse for storing supplies purchased ahead of time). Example: A three months' supply of a certain dyestuff was purchased ahead of a price rise, for a saving of $40,000.

A lengthy annual report is made to top management on the operation of the purchasing department, summing up the department's operations for the year. The director of purchases meets with the secretary and treasurer weekly to discuss current problems.

SUPPLY AND INVENTORY

ALTHOUGH supply rooms or stores are not under the supervision of the purchasing department, the director of purchases works in close cooperation with the storekeepers and the manager of supply control.

The maximum allowable inventory for supplies is determined on the basis of past usage, by number or volume, or by number of days supply; by the lead time required to get a particular item; and anticipated usage. Thus the maximum inventory quantity may vary, depending on usage and availability.

Supplies are ordered in standard-size lots, and so the maximum inventory point is, for some items, dependent to a certain extent on the amount of the product put up in a standard package. It is also set so as to take advantage of quantity discounts.

For most items, the maximum inventory is a 60 to 90 days' supply, and the ordering point is usually one-half the maximum.

The over-all inventory is currently running at about $1,750,000, or about $3.85 per spindle or $188 per loom. Spinning room machinery parts in inventory are valued at only about $16,000, and loom parts at $168,000.

The over-all inventory turns over an average of about 8.7 times per year; stock items turn over about 6.7 times. Since the inventory level for dyestuffs is lower than for the average supply item, the dyestuffs inventory turns over about 14 times annually.

Purchasing for a small mill

by the Mill Manager

Exclusive

OUR SMALL MILL delegates the purchasing function to the plant manager, rather than establishing a position to do this job exclusively. In fact, as the plant manager, I am also the production controller, head of the quality control department, and the cost accountant.

This has some obvious disadvantages, but it also has the advantage that I am personally aware of, know the details of, and consider all the ins and outs of the items we purchase.

My experience in doing all the mill's purchasing for about five years has been guided by several simple but tough rules:

1. Know as many suppliers for each type of product as convenient, and keep up with changes in their policies and prices.

2. Buy with vengeance — use price and other conditions of sale as a wedge to play one supplier against the other to get the best deal.

3. Don't put all your eggs in one basket; have at least two suppliers for each major item.

4. Check or spot check all purchased items for accurate billing and delivery of proper weights and/or quantities, as well as quality of goods.

5. Have some simple system for ordering, and originate it from the mill whenever possible.

6. Keep accurate book records of orders and deliveries against orders. A good way to do this is to make journal entries from orders and invoices.

7. Centralize ordering as much as possible, so that one person knows or can check the status of any order at any time. However, for machine parts, office supplies, and other items not requiring large expenditures of money, we let foremen or other supervisors place the order verbally, with no consultation; confirmation is made by a purchase order.

8. Don't pass an invoice for payment until a receiving slip arrives from the appropriate department.

If conditions in a supplier's quotation are confirmed by letter, contract, or verbal agreement, we hold him to the letter.

We once bought a card cutting machine (for Jacquard); the supplier made a mistake of $75 in his quotation. Although the agreement was verbal, our ownership made me force the supplier to meet his commitment, despite the question in my own mind about the ethics of the situation.

9. Be sure that the person doing the buying is in close touch with the budgeting schedule, or that he checks with the person who is, before making purchases so that spending is not over the budget for any period.

10. Have a "tickler" system to make sure that orders slated for delivery at a certain time to meet production scheduling are actually delivered. Don't wait until the last minute to check.

Watch small sample purchases — they can pile up huge small-lot inventories in no time. Order only what is needed for a trial; if a cone will do, don't arbitrarily order five pounds.

11. Yarn ordered for novelty work might not be used again for some time; so we order as close to calculated requirements as possible. In ordering often-used materials, we keep a few items or cartons ahead. For larger expenditures, necessity is the mother of purchasing. I try to keep the inventory as low as possible, without actually shutting down the mill.

TO SUMMARIZE the system, it is based on tough, tight control. Mechanically, it is simple: an ordering form, which is used as a follow-up file, and on which deliveries are entered; and a master ledger record of all orders and deliveries. Both records are cleared from invoices, which are checked carefully by a responsible person before clearing for payment.

I find that these rules, which originated with ownership, are more effectively applied through a little different approach to salesmen than that made by the average PA (from what I hear). That is, I have gotten to know these folks well; I always have time to see them — all of them — and I never play "top dog."

This policy has paid off in getting special favors, such as payment term extensions, first crack at "hot items" when they're new, and a fair share of scarce or alloted supplies.

I don't take offense if a salesman goes to see someone in the mill before he comes to see me (or if he doesn't come to see me at all). If he sells something for which a foreman can place an order, he's just conserving time for both of us. If not, he's wasting his time, because unauthorized persons simply don't place orders. Salesmen soon get to know where to make their pitch.

I particularly like to talk with the salesman who is a "soft" seller — one who dispenses with high pressure and phony claims, who knows his product and its relation to the mill's operations, and can tell us how to use it.

I also like the salesman who will, after you get to know him, advise you of the how, when, and where of price rises, so that you can cover yourself. And also one who will come around with a new product while its still hot, rather than using it to get an "in" with a big mill.

Incidentally, another policy which I have found helpful is to make occasional visits to suppliers; this is the best way to get to know the product and the people who make it.

Chinese Wall or Iron Curtain?

Are production personnel being shielded from the disturbing effect of new ideas?

by Cabot L. Saltoncod
Exclusive

BEFORE Sir Winston Churchill coined his felicitous phrase about the Iron Curtain, the Chinese Wall had usually been considered the most appropriate symbol of exclusion. This remarkable piece of construction was designed to keep the warlike enemies to the North of China under control, and to form an effective barrier to the miscellaneous plunderers who would otherwise have afflicted a civilized people.

Whereas the Chinese Wall was designed to keep out people bearing arms, the Iron Curtain was designed to keep out people carrying ideas.

For a good many years, it has seemed that the Chinese Wall or Iron Curtain philosophy has been spreading in American business to shield superintendents, foremen, and other minor functionaries from the disturbing effect of new ideas. At one time there was an Iron Curtain around practically every industrial plant, and behind this curtain, Management operated the plant under the delusion that these operations were valuable secrets which must be kept from prying outsiders.

Frequently the only secret about the plant was how it managed to survive with obsolete equipment and antiquated technical knowledge. Many persons now living can remember well when it was extremely difficult to gain access to one of these plants, and when the honored visitor was carefully ushered through the sacred precincts to be sure that he didn't see enough to pick up any of the cherished secrets.

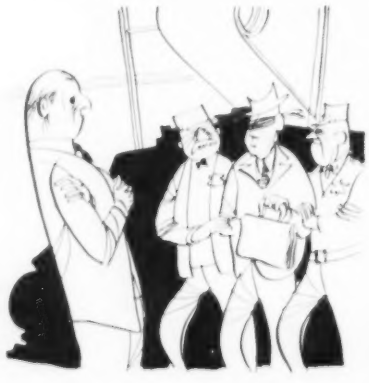
Industry generally has abandoned this secretive attitude, and practically everybody agrees that a frequent exchange of visits and a free and open trading of ideas have been beneficial. However, as industries get larger and more complex, there seems to be a growing tendency to pull the Iron Curtain down between supervisory management and the great fund of outside information borne by the traveling salesmen.

OLD-TIMERS in New England, where industry had been long established, can well remember the legendary figures of famous mill Treasurers and Agents. The Agent occupied about the same position held by a duke in medieval days. He was regarded with awe and veneration, or at least fear, by all of his minions.

The Treasurer was a distant, godlike emanation from Boston, who appeared at the mill only occasionally, and whose profound deliberations with the Agent could not be disturbed under pain of frightful reprisals.

A visit to one of these old-fashioned mill Agents in New England was not a thing to be undertaken lightly unless the visitor was an old friend. It was generally believed that many of these mill Agents had no friends. Some of these men went to fantastic lengths to shield themselves from contact with any new and

The rare visitor to the mill was carefully ushered through the sacred precincts to be sure he didn't see enough to pick up any of the cherished secrets.



The old New England mill Agent occupied about the same position held by a duke in medieval days; the Treasurer was a distant, godlike emanation from Boston.

disturbing ideas.

There was one famous character who had a letter neatly framed and hung by the wicket where salesmen must first apply for an audience, and in this letter it was set forth that the great man was constantly being importuned by people with schemes of their own to advance, and in order to save his precious time it was necessary that all persons desiring an audience should state in writing exactly what they wanted to talk about. This memo would then be submitted to the Agent, and if the proposition did not appear to be too disturbing, the fortunate suitor might later be admitted to the august presence.

Another one of these petty despots had a noted system for breaking the spirit of the hapless salesman. He would tell his secretary to have the telephone operator call up Mr. So-and-So and make an appointment for the following morning. The salesman, charmed by this sign of condescension on the part of the old bandit sitting behind his Chinese Wall, would present himself hopefully at nine o'clock. He would find that the Agent had not yet come down.

After waiting an hour or so, and timidly asking the telephone operator what had happened to the appointment, he would find that the Agent was in conference—the other party at the conference was possibly the *Boston Transcript* or the *Herald*. About noon when the salesman again wondered about his apparently vanishing appointment, he would find that the Agent had gone out to lunch, and perhaps he should come back about two-thirty.

The afternoon wore on in exactly the same manner, and the sufferer was instructed to come back the following day. This kept up until the Agent figured that the salesman's spirit was hopelessly subdued, and he would take whatever was thrown to him at whatever price was offered, and be glad to get it. It is not of record that anybody ever inserted a new idea in the mind of this particular Agent.

The smart salesman, of course, who knew what was happening to him, would check in at the time of the appointment and blithely go about his business. He would check in again about two-thirty, and put in an afternoon doing something useful elsewhere. The following day he would show up with the expectation of getting something accomplished at this particular place.

THERE IS no telling of course how much this sort of foolishness contributed to the moribund condition in which so many northern mills found themselves after the First World War, but anybody who ever tried to carry any new ideas into these plants will painfully remember the difficulties encountered and obstacles thrown in his way. The favorite comment of the typical Agent and his minions was, "Not interested."

We are beginning to notice a revival of this sort of thing in a number of large textile concerns. Notices are sent to all suppliers that henceforth no one is to call at mills. Any information about what is going on in the outside world of interest to a superintendent or foreman must be gleaned from a magazine or trickle down from the summit where the Purchasing Agent's Office is located.

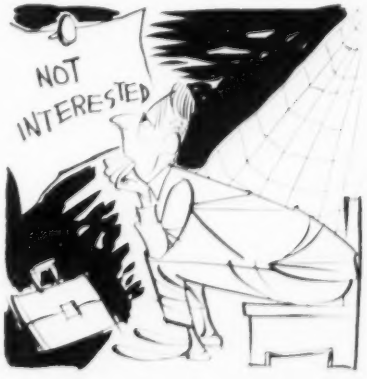
Efficient management must of course try to protect its superintendents and foremen from the blandishments of the numerous salesmen who are simply vying with each other for the sale of simple commodities like brooms and scouring powder, but it seems that this could easily be done without the assistance of a Chinese Wall. The thing that strikes us as dangerous is insulating local management from exposure to really good ideas presented by capable and intelligent salesmen.

The presence of an Iron Curtain may assure people in the main thinking what you want them to think, but it doesn't teach them to think.

THE EDITORS of this magazine have a particular interest in the value that their readers get from the editorial matter published in the magazine and from the advertisements which suppliers have prepared and published at considerable expense. The suppliers who have something new and worthwhile to talk about usually also have salesmen who are spe-

Seeking an audience with one of these old-fashioned New England mill Agents was a task not to be undertaken lightly unless the visitor was an old friend.

The favorite comment of the typical New England mill Agent and his minions was, "Not interested." No one ever inserted a new idea in the mind of this Agent.



The Purchasing Department did not want supervisors getting silly ideas, and saw to it that people who could implant such ideas were carefully kept out of the mill.

cialists in their line, and who can often give superintendents and overseers invaluable information.

A man who has seen something new and useful to him described in a magazine might be able to do his company a real service by having an opportunity to thoroughly acquaint himself with the advantages of the new idea. All too frequently, hardening of the arteries has set in at the level of the Purchasing Department which has a satisfactory source of supply for something which seems to be good enough.

This was certainly the case with many of the old mills previously mentioned. The Purchasing Departments did not want overseers or superintendents coming up with any silly ideas, and saw to it that people who could implant such ideas were kept out of the mill as carefully as possible.

We have no fault to find with centralized purchasing, which is a necessity in a large organization. It does not take long for salesmen selling run-of-the-mill commodities to learn that it is a waste of time to call at a local plant if he has to see somebody at the head office to get an order.

It is the exclusion of the man with a really educational story to tell that may do the harm. The local functionary at the plant is not only better informed by coming in contact with these outside specialists, but he has a chance to sharpen his mind in discussion with these people who usually know a great deal more about the subject than the man in the mill can ever know.

Back in the old Chinese Wall days in New Bedford, there was a mill Agent who remembered that all he knew about running a mill had been learned from people who knew more about something than he did, and these people were frequently salesmen. Consequently, contrary to the customary practice among his kind, he liked to see salesmen when time permitted, and exchange ideas with them.

Unless the salesman is somebody peddling a commodity of little consequence, he is probably a specialist. Often out of his wide experience he has the immediate solution to a troublesome problem, and it seems to us that top management should be very careful about shutting off local managements from this specialized knowledge.

"It's service – not personality – that counts"

A yarn salesman discusses purchasing agents

Exclusive

I'VE BEEN in the position of having been both a weaving mill PA and then later a yarn salesman. I formed an opinion when I was a PA and used it later as an approach in selling: The personality of the salesman means nothing; it's the service he offers that counts.

I've been guided by that in selling; I try to give good service and never promise something in terms of delivery that I can't make good. This might account for a generally good reception that I get from most mill PA's now.

This service angle is a protection feature for the PA; if he is responsible for a shut-down because of lack of materials he promised, he's in trouble, even if the promise was based on the word of a salesman. A salesman who specializes in false alarm promises is in for trouble and hostile PA's.

Service then, with price being equal, pretty much determines the attitude of PA's to salesmen.

Yarn salesmen, I feel, are the salesmen most cordially received by mill PA's. This is probably due to the fact that yarn is the bread and butter of the weaving or knitting mill; without it there is no product. All of this rough stuff you hear about is generally at other textile levels such as, converters, jobber, cutter, etc.

Another possible reason for this good reception is the news angle. We pick up all kinds of information in our travels about what mill is in what shape, who's doing what, and so forth. PA's are glad to get this dope — they can very often use it to advantage.

Still another reason is that we often bring news of new products that our company is putting out, and this is an important source for the mills to keep up with the times. As a result of all of these things, most PA's are cordial and receptive.

Of course, the amount of time he spends with us depends on how busy the man is. If a top level exec is doing the buying, five minutes is a lot of time and we have to spit out our story and get out. Sometimes these meetings are more conveniently held at lunch for this reason. We naturally cater a bit to the top man.

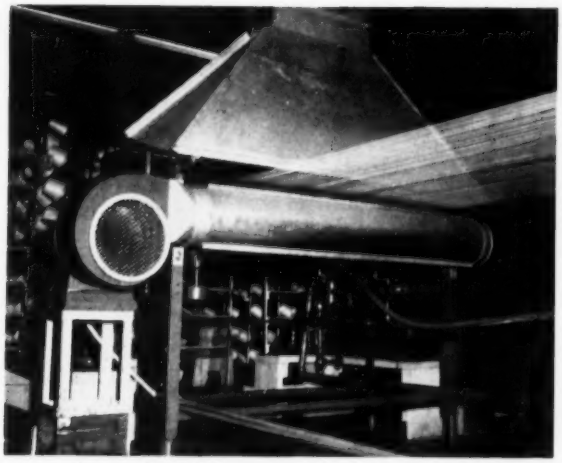
If an order goes bad we'll hear from the PA, of course; but I've had no cases of nastiness just because a PA is a buyer and I'm a seller.

I can always depend on some kind of a courteous reception at the desk and some kind of an answer quickly from the PA as to whether he can see me or not, or when he can in the future if an on-the-spot interview is not possible.

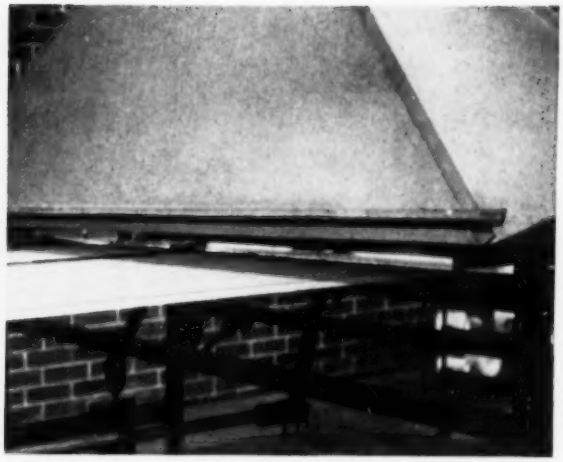
In our own organization we follow the same rules for receiving a visitor: Tell the man when you can see him; don't keep a man waiting on the phone.

All in all, dealing with mill PA's is a pretty clean business.

FOR REPRINTS of this special section, write to The Editors, "Textile Industries," 806 Peachtree St., N. E., Atlanta 8, Ga. Requests will be honored so long as the limited supply lasts.



A type of warp singer (not mentioned in the text) which will singe an entire warp at a time. A blower blasts loose some of the carbon,



left by the singeing, and directs it into the hood. Brushing (right) removes the balance of the soot.

Vigilance and control are the secrets in

Gas singeing cotton yarns

by Frank Vogel
Consultant on quality control
Exclusive

SINGEING is done to remove the fibers which protrude in every direction from a cotton ply yarn. When properly done, the operation imparts a brilliancy and luster in the end-product—whatever that may be—which cannot be obtained in nonsinged products.

The operation, though comparatively simple, is like every operation in textiles: attention must be paid to certain key points if optimum results are to be enjoyed.

Singeing is usually accomplished by means of gas or electricity. Gas singeing only will be taken up here, with single singeing being the major consideration.

In gas singeing the most important element is the flame. Along with the flame, the number of flames (the number of holes in the burner) decides the amount of pressure of gas and air required.

With ordinary coal gas the flame issuing from a single hole shows a double cone. The outer cone is an envelope of yellowish flame; the inner is a smaller blue cone which is considerably hotter than its companion.

Once the suitable pressure for a given ply yarn is determined, it is important that the adopted pressure always be maintained for that item. Usually, where there are different yarn numbers, different plies, and different amounts of twist, it is a good plan to group together those numbers which can be singed properly with a specified pressure.

For example, 40s, 50s, and 60s six-ply yarns will run well with the same pressure. This eliminates setting up a different pressure for each yarn number. This simplification pays.

The details of yarn numbers, pressures, and speeds, etc., should be in possession of the singeing foreman. Better still, if it is not a top secret, the information may be put on a card and hung on a wall in the gassing department. Some nasty errors have been avoided by adopting this plan.

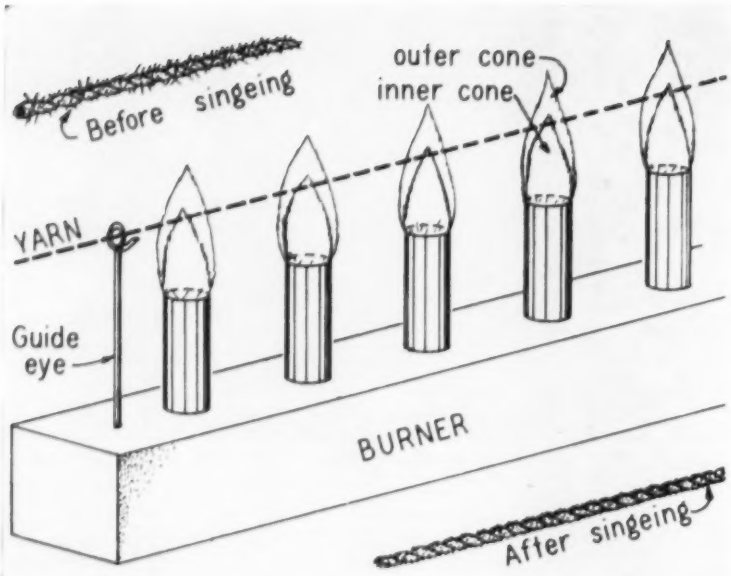
PROPER RECORDS, instantly available, are especially needed where a large variety of yarns are run in the singeing department. Hard twisted, medium twisted, and soft twisted ply yarns may all require different details. This is also true when there is a variety of plies—2, 3, 4, 6, and so forth.

When a firm has mills in different parts of the country, there will be times at which one mill may be called on to help out another plant in the group. Naturally the mill requiring assistance will forward all the details of singeing. Nevertheless, to avoid trouble, the mill helping out should make a check test to ascertain if the same pressures, speeds, etc., are suitable.

It is advisable to have a cardboarded sample of the required gassing forwarded with the material to be singed. The writer has seen a marked variation in singeing results when mills separated by a considerable distance have used the same singeing particulars.

Once the right pressure has been found in any singeing it is important that the end of yarn be kept running through the same spot in the flame. After some research work it was found by one mill that a position just inside the tip of the inner cone gave satisfactory results.

Not only must the yarn run through the same position in the flame, but the end of yarn must pass as nearly as possible through



Individual ends are passed over the gas flame near the tip of the inner cone. Since variation in alignment to the left or right will not permit uniformity of singeing, the position of the yarn over the tip is very important.

the central part of each flame.

It is therefore necessary for the machine shop making the burners to have the holes in as nearly perfect alignment as possible so that the cones of flame will coincide from top to bottom. This means, too, that when the burners are installed on the machine they must be plumbed.

ALONG WITH THE PRESSURE and the proper alignment of the yarn through the flame comes the matter of speeds—the yards per minute of material that pass through the burners. The speed will have to vary depending on the type of yarn.

It has been found that with the same number of holes in the burners, and the same pressure, that the variation in yardage gassed may have to range from 100 to 500 yards per minute, for the desired quality of singeing.

Because of the necessity for having a variation in speed (other details being equal) the foreman should endeavor to arrange his machines, or parts thereof, so that as little change as possible will have to be made. Daily shuttling back and forth of speeds can often lead to errors in speed, and consequently, faulty singeing.

As in the matter of pressures and speeds, as has already been suggested be put on a card and hung on a wall, other particulars such as change gears should be included.

It is well to blackboard the yarn from several burners as a check for correct gassing when first starting a yarn for singeing; and for precautionary measures a blackboard should be made up periodically from at least one drum on each of the several sections making up a singeing machine.

Where the degree of singeing is of paramount importance, special pains must be taken to make up a standard blackboard to which the weekly samples may be compared.

Since strength is usually quite important in some items, both sizings and strength tests should be made when samples of gassing are procured. It is not unusual to have some slight difference in shade of the gassed units, so a sample of one of the darkest packages should be checked for strength weekly from each type of yarn singed. Over-singeing from whatever cause should be avoided.

TENSIONS must be carefully watched. Occasionally a slight change in tension as the yarn runs through the flames may be necessary for best results. When tensions are changed, all units on the same section of the frame must have the same tension.

The tensions should be sufficient to keep the yarn in its proper place in the flames on a burner. Flickering of yarn away from the central location will result in uneven singeing.

For some very delicate yarns, it may be advisable to block off some of the holes in a burner; that is, if burners with a smaller number of holes are not available. Soft-twisted two-ply yarns burn quite readily and therefore, if some change is not made, will rupture frequently, and thereby require more knots and reduce production accordingly.

When there is not a sufficient quantity of these fine numbers so that one side or part of one side of a machine can be equipped with burners with fewer holes, the next best thing is to plug a number of holes in the regular burners with a fireproof compound. Later on, when the fine yarn has been disposed of, the plugged holes may be cleaned out.

DRY VS. WET TWISTING—the question often arises. Dry twist by all means! Particularly if cleaning off the protruding fibers as closely as possible to the core of the yarn is a requisite.

Wet twisting is sometimes resorted to when the amount of twist in the material is great enough to cause snarling when the yarn is reeled after singeing. Such a condition may cause trouble in the dyeing or bleaching.

Since singeing removes the extraneous fibers projecting from the core of the yarn, it obviously causes some change in the sizings of the yarn. The amount will vary in accordance with the quantity of fibers removed.

By the same token there will be a loss of weight. This occurrence likewise depends on the fiber removed. The loss in weight of soft twisted material may reach 2½% to 3½%.

In line with changes in size and weight there is sometimes a loss in strength, reaching as high as 5% to 6% for a medium-twisted three-ply yarn.

Therefore it is well to bear the

foregoing remarks in mind as a singed yarn may otherwise be finer than a customer desires, or the strength may be somewhat down. A slightly heavier initial yarn may have to be used.

Whether light or heavy singeing is the practice, it is advisable to make up a sample of the yarn that is satisfactorily singed and which has been accepted by the customer—for reference just in case of a future argument.

There is this to be said about the different extremes of singeing: Too light a singe may not remove enough of the loose fibers; whereas too heavy a singe may result in loss of production because of excessive burning of ends, or there may be an undesirable reduction in strength.

UNEVEN SINGEING will show up in the reeled skeins of the singed yarns. Some skeins will be of a lighter than average hue, some a darker. Occasionally there may be light and dark shades in the same skeins. This is sometimes brought about when a package back of the reels runs out and a fresh package has to be tied in. The packages may differ somewhat in shade.

Although a slight variation in shade between skeins may sometimes be unavoidable, reeler operatives should be trained to report immediately any noticeable extremes.

It is well, too, for the singeing department foreman to take a walk around the gassing reels, say once a day, and check for variation. If there are extremes every package running on the machine from which the faulty singed units came should be examined to find the cause.

In checking for the source of trouble, it will sometimes be found that an end of yarn escapes from its confining element and rides alongside the flame so that it receives little, if any, singeing. Should the package from this burner escape the eye of the singeing operative, the reeling operator should set aside the package to be returned to the singeing department.

Here arrangements should be made to handle the lightly or ungassed packages on a special burner which may be fitted with shutters to shut off a certain number of holes in the burner. Otherwise, if put on a regular burner, over-singeing may result.

DOUBLE SINGEING must be resorted to in those cases where single singeing does not clear off the loose fibers sufficiently well. This occurs more frequently with coarse multi-ply yarns.

Usually this can be done by simply re-singeing packages after they have received their initial operation. When the regular pressure is sufficient no complications occur, but when the double singeing at the regular pressure singes too much, a change in the regular setup is necessary.

When the material will stand a little extra speed without breakage of ends, it is merely a matter of changing the gears controlling the speed of the drums. When this is not feasible, blocking a few of the holes on just enough burners to take care of the quantity required will suffice.

A third method is sometimes resorted to when the above two methods are not considered suitable. This is reducing the burner pressure slightly. Where either change of speed or change of pressure is put into effect, care must be taken to bring speed or pressure back to normal when the double singeing is completed.

Every repeat order for double-singeing for a certain customer should always be done the same way and should match the standard required by this customer. A sample of the first order should be kept on file.

WHEN SEVERAL YARN numbers and different plies are run at the same time, some identification of the different classes is a must. Some mills try different colors on the bobbins on which the yarn is wound, or have the paint on the exposed ends of the bobbins.

This is an excellent plan when the different lots are much the same in quantity over a rather long period of time. However, the trouble is that production schedules have a habit of getting out of control for one reason or another.

The result is that there will be large stocks of certain colors of bobbins lying around while there will be shortages of bobbins of other colors. Marking the packages with a crayon of fugitive colors is one way of circumventing this trouble.

Singeing is a simple operation; that is, when every angle peculiar to it fits efficiently in its respective place. Some of these details have been mentioned in this paper. To carry them out means successful singeing and satisfied customers. To neglect them will result in poor singeing, waste, loss of production, and even cancellation of orders.

Know what size traveler to use for new yarns?

■ A formula that has proved satisfactory for determining the size of the traveler to use when changing spinning frames making coarse yarns over to finer yarns was given in a recent issue of *The Traveler*, publication of Victor Ring Traveler Co.

Take the number of the yarn being spun and multiply it by the weight of 10 of the travelers being used. Then divide that figure by the number of the yarn to be spun. The answer is the weight of ten of the travelers to start off with on a trial basis.

The following example was given:

A mill running 30s yarn uses a 6/0 traveler. Ten travelers weigh 6 grains. Using the formula, $30 \times 6 = 180$. If the change is to 20s yarn, $180 \div 20 = 9$ grains, the weight of 10 travelers which, when divided by 10, indicates that a 1/0 traveler should be used.

While not exact, this formula will undoubtedly save time when starting up new yarn numbers on frames, the article concluded.

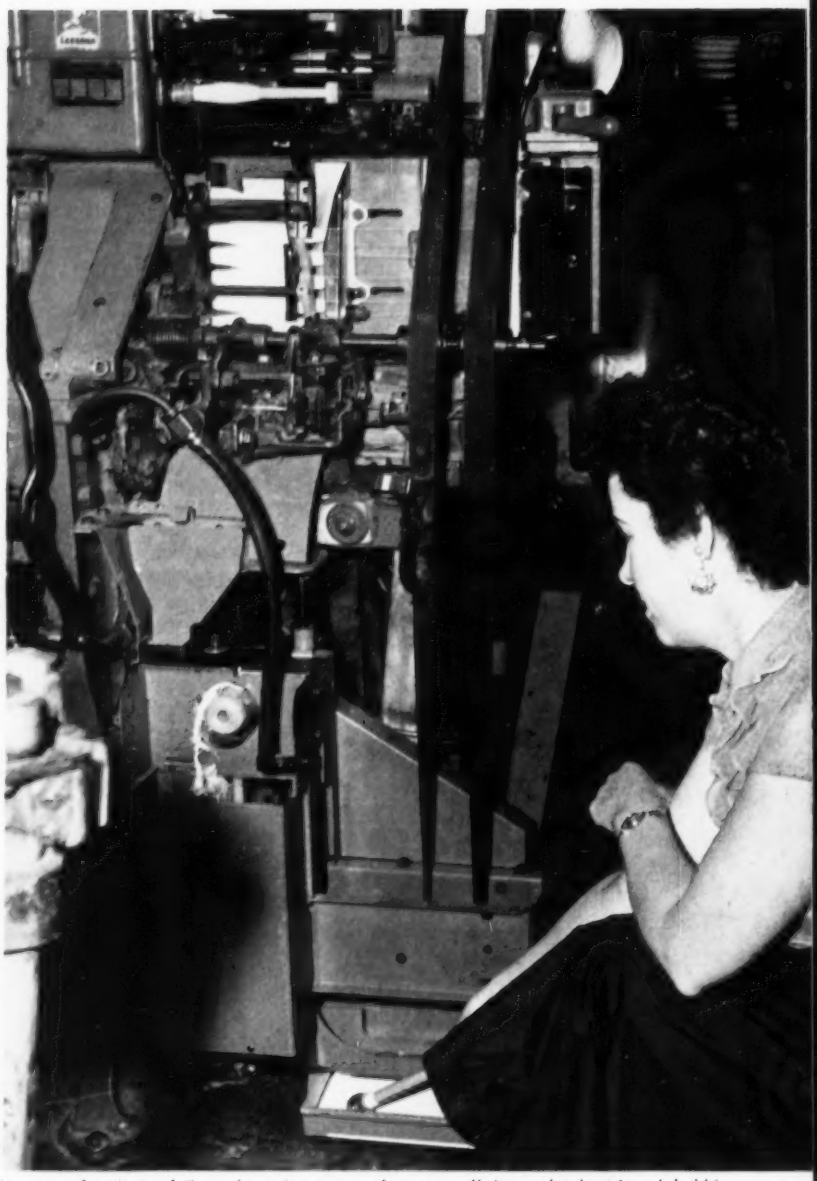
Mill test indicates short liquidation period for

Loom Winders on Combed Cottons

Staff report*

A STAND of Unifil-equipped Draper X-2 looms weaving cotton fabrics at Hoosac Mills Corp., New Bedford, Mass., surpassed in performance a similar block of looms equipped with conventional rotating batteries, according to the results of a study conducted by a firm of textile mill management consultants for Universal Winding Co., manufacturer of this loom winder.

[The Unifil, which combines winding, bobbin transportation, magazining, and stripping into an automatic procedure that takes place right at the loom, was first introduced to the public at the American Textile Machinery Exhibition in Atlantic City, N. J., in 1950 (TEXTILE INDUSTRIES for July, 1950, p. 168). Since that time, extensive field tests have been conducted (TI for March, 1956, p. 115). Commercial availability of the winder was announced while it was on display last fall at the Southern Textile Exposition (TI's 1956 Equipment Parade & Buyer's Guide, p. 91). —The Editors]



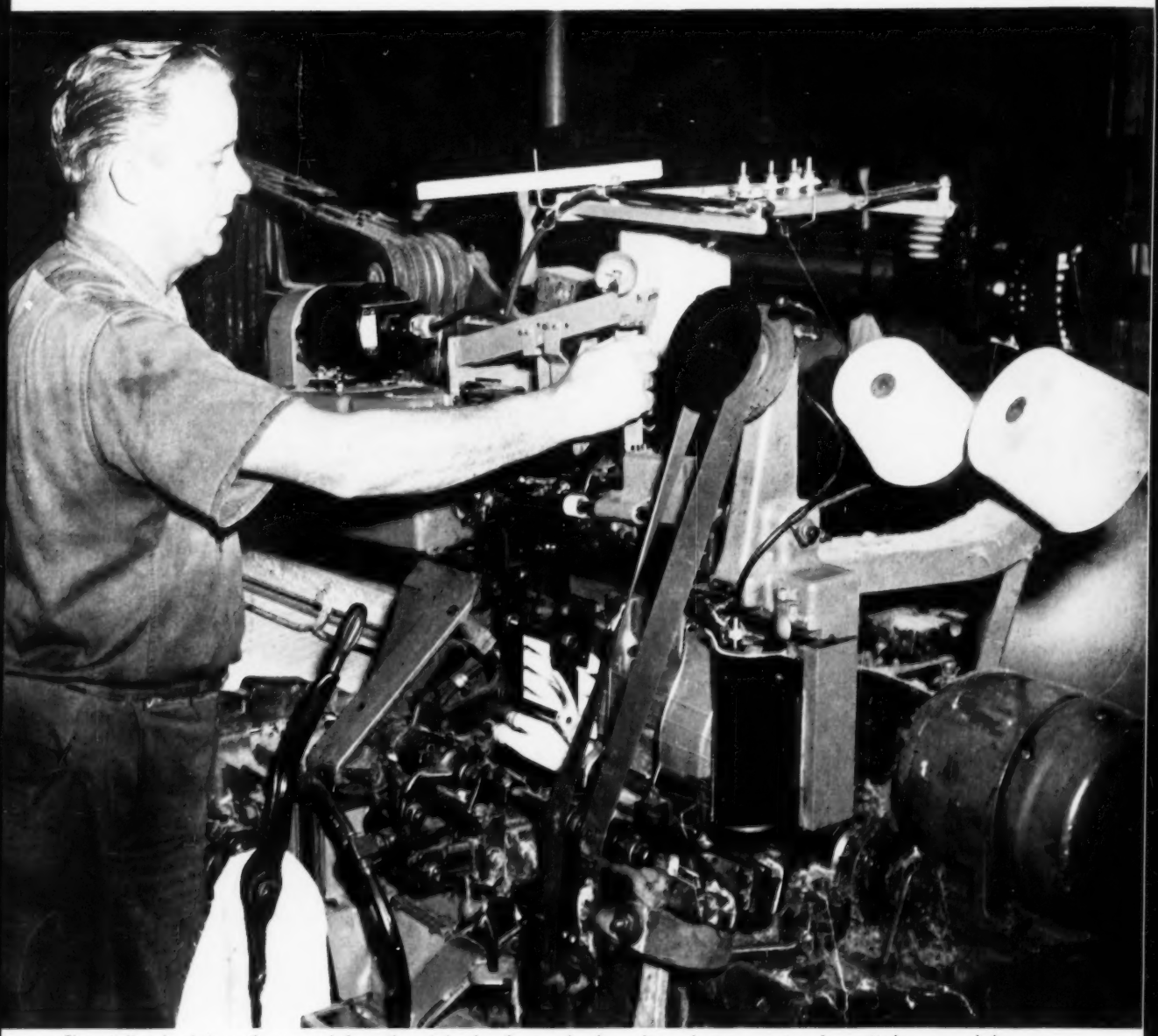
In case of stripper failure the unit removes from use all incompletely-stripped bobbins.

The tests disclosed an average reduction in filling stops of 15% on all filling counts; and a reduction of 10% on 13s filling. For the breakdown of filling stoppages, see table at bottom of page 124.

The three fabric groups studied (oxford and warp stripe) represented three combed-cotton filling counts: 13s, 15s, and 40s. Two complete weaver's jobs (48 looms) represented the test block of which one weaver's job of 24 looms was equipped with Unifil.

Operational cost savings, based on the studies, and extended to represent a hypothetical plant operating in a selected location, and producing a similar fabric (88 x 60. 40/2 warp, 13s filling, 44" reed width) on 1000 looms running 120 hours per week, indicate that the units can be amortized in a period of 1.7 years. This is equivalent to

*Based on information obtained during a visit to Hoosac Mills from representatives of Universal Winding Co.



The winding head is easily removed from the winder by the regular loom fixer whenever repairs of magnitude are needed.

a write-off of 58.8%.

The development of overhead cost comparisons — based on the cost of new equipment in each instance of insurance, taxes, depreciation, etc., assumed that existing equipment had no salvage value. Any returns from the sale of winders, bobbin strippers, etc., will reduce the amortization period; while any use of yarns finer than the 13s discussed in the study will lengthen it.

Throughout the test the operating practices of the personnel involved remained unchanged except for the assignment of creeling and stripper-waste collecting to an indirect operator, and the assignment of the fixing duties to a representative of Universal Winding Co.; the weaver tended the Unifil units.

Weavers on Unifil spent a total of 12.8% of their time servicing the units. Their over-all time utilization (task) reflected only a 2.8% increase over that of the weavers assigned to the conventional looms. The disrepancy between the additional percentages of time devoted to Unifil tending and the variation in total time was brought about by the weavers assigned to the conventional looms having to spend a greater proportion of their time repairing loom stops, and by a tendency of those weavers toward excessive patrolling.

To render the time spent by the weavers as they serviced the Unifil units to a common yard stick for industry at large, the loom speeds from 223 to 225 ppm (high

A portion of the 24-loom stand equipped with Unifil winders photographed while running.

for the industry) were converted to 185 ppm. This speed is more representative of those used by the majority of plants; and based on the test data, will require the weaver to spend a total of .1577 minutes per producing loom hour servicing the Unifil. The unit itself introduced some additional elements (winder malfunctions) into the tests which had to be accounted for in the motion and time studies.

Although there was evidence pointing to increased loom efficiency, reduced waste, and improved quality, the limited installation studied did not lend itself to the establishment of factual data concerning those factors. Consequently they did not influence the conclusions reached by the engineers.

During the 712.49 loom hours of observation on the 13s filling, the number of Unifil malfunctions recorded amounted to 241. Based on the calculated number of bobbins handled by the winder units, this is equivalent to 1.5% malfunctions.

Fixing requirements, based on a total of 2814 loom hours of observation, were divided into two categories, namely: those to be performed by the regular loom fixer in the normal performance of his duties, and those performed by a specially trained Unifil winder fixer.

THE LOOM WINDER is a unit designed to wind a filling package, transfer it to the shuttle, and strip and return the empty quill to the winder. It has a magazine supply creel which accommodates two packages of yarn.

At present the unit is available for processing either cotton or synthetic yarns on Draper Models XD, XK, and X2 looms. It is easily installed on the mount which holds the conventional rotary battery.

The heart of the unit is the winding head (its winding speed is synchronized with the loom speed) which builds the filling packages to fit the loom needs.

A full-package magazine stores and feeds the filling to the loom; an empty-bobbin magazine feeds the cleaned quills to the winder unit through the use of a conveyor.

By replacing the present rotary battery system of the automatic loom, the system eliminates quill hauling and battery plugging; and eliminates the entire quilling area. Cone trucking and creeling can be done by unskilled operators.

In operation the weaver tends the unit. The loom fixer does normal fixing on the unit, leaving overhauling to a trained Unifil fixer.

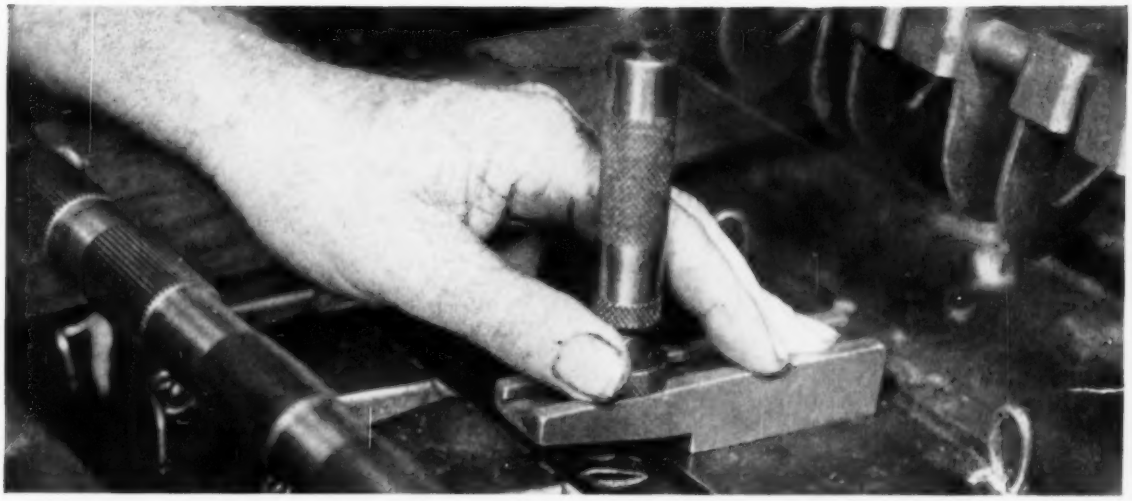
The bobbins are altered to incorporate small wire cleats to pick up the end — only 14 bobbins per loom are needed.

With the removal from production of the conventional quilling and stripping area and operations, inventories of yarn and bobbins are reduced as a further saving.

Supply yarns are stored on cones in units easier to count and control. If conditioning is required, the yarn is treated in the coned state.

Comparison of Filling Stop Causes—Regular Versus Unifil Equipped Looms

	Unifil Looms								Regular Looms							
	No. Stops				Frequency/P.L.H.				No. Stops				Frequency/P.L.H.			
	13/1	15/1	40/1	Total	13/1	15/1	40/1	Avg.	13/1	15/1	40/1	Total	13/1	15/1	40/1	Avg.
Knot	—	—	1	1	—	—	.007	.001	2	—	1	3	.003	—	.012	.004
Bad Bobbin	2	—	—	2	.003	—	—	.002	8	—	1	9	.014	—	.012	.012
Run Out	10	—	1	11	.014	—	.007	.012	14	2	—	16	.024	.020	—	.021
Waste in Eye	19	—	5	24	.026	—	.034	.027	12	2	3	17	.020	.020	.035	.022
Weak and Uneven Yarn	27	—	6	33	.037	—	.041	.037	8	4	4	16	.014	.040	.046	.021
Rough Shuttle	2	—	1	3	.003	—	.007	.003	3	—	2	5	.005	—	.023	.006
Knock off at Transfer	4	—	—	4	.005	—	—	.004	7	—	2	9	.012	—	.023	.012
Shell Off	11	—	—	11	.015	—	—	.012	1	1	—	2	.002	.010	—	.003
Break at Transfer	27	—	11	38	.037	—	.076	.042	35	5	7	47	.059	.050	.081	.060
Inside Tail	1	—	—	1	.001	—	—	.001	3	1	4	8	.005	.010	.046	.010
Unknown	35	1	13	49	.048	.045	.089	.055	35	6	8	49	.059	.060	.093	.063
Waste in Yarn	9	—	—	9	.012	—	—	.010	5	—	1	6	.008	—	.012	.008
Soft Bobbin	1	—	—	1	.001	—	—	.001	—	—	—	—	—	—	—	—
Fail to Transfer	6	—	—	6	.008	—	—	.007	—	—	—	—	—	—	—	—
Poor Spinning	—	—	—	—	—	—	—	—	—	1	—	1	—	.010	—	.001
Dirty Filling	—	—	—	—	—	—	—	—	—	—	2	2	—	—	.023	.003
Broken Bobbin	—	—	—	—	—	—	—	—	1	—	—	1	.002	—	—	.001
TOTAL	154	1	38	193	.210	.045	.261	.214	134	22	35	191	.227	.220	.406	.247



Short of section men? Use one of these tried and proved methods for

TRAINING SPINNING FIXERS

by Maley Chagro
Exclusive

*Part 1**

COMPARATIVELY little has been published about the importance of the spinning fixer in our textile set-up, perhaps because he is more or less taken for granted—an employee with latent or active mechanical ability assigned to maintain a group of frames with the primary purpose of keeping them operating efficiently.

Actually he is the most important man next to the second hand (perhaps more important in all-around duties than are the spindle setters and overhaulers), because the least of his tasks are always important and reflect upon the production and quality of the section he maintains. In some areas he is known as the section man.

Of necessity many of his tasks are repetitive, consisting of routine duties, not one of which can be neglected or even temporarily bypassed. How are these fixers trained in their all-important duties? Who trains them?

The three methods of training described in this article have been used successfully in at least one mill. The methods are:

1. The apprentice is trained by an experienced fixer.

2. The apprentice is trained by placing him with the spindle setters and the overhaulers for a period.

3. The apprentice is trained by a second hand who was formerly a fixer.

Except in emergencies, the training in the plant which the author has in mind was conducted by the first method. Obviously under this method the apprentice is always with the regular fixer, and absorbs the myriad details of fixing while actually performing them.

Many fine fixers have been recruited from the ranks of roving hands, yarn hands, and doffers. All apprentices, however, should be carefully screened to determine their mechanical abilities, and all such training should be under the direct supervision of the second hand.

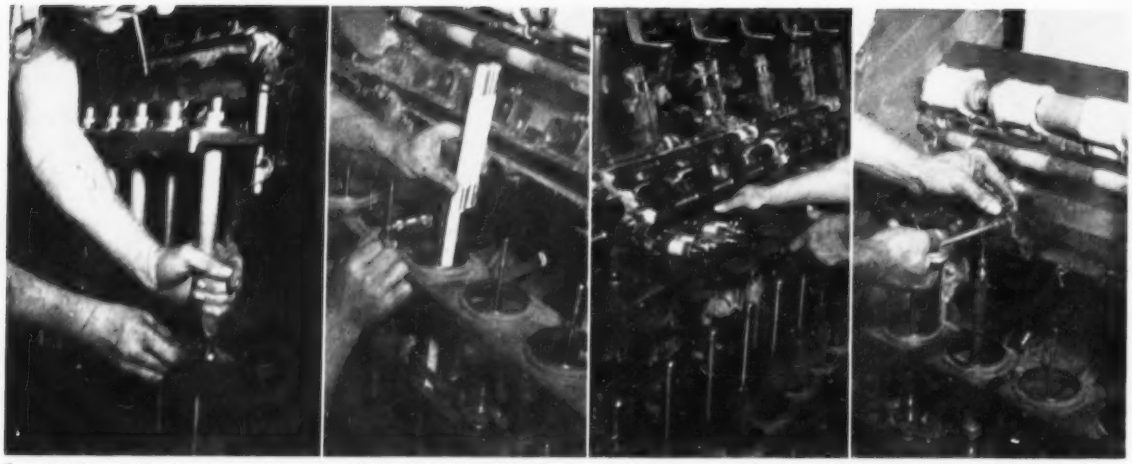
The fixer who trains the apprentice should be one in direct line for promotion, or a man whose ability to train is well established. There is also a human element involved that should be carefully handled—no fixer wants to train anyone for his job if the fixer is going to be fired!

The fixer who trains must be equipped with a working time table. To set up an exacting time table is an obvious impossibility, for too many details have to be observed and stored in the memory.

Many "trial and error" methods in relation to the builder winds are thus stored—subject material on these winds was recently published in this magazine. This material, together with the fixer's time tables and instructive matter, will form an excellent all-around training program that will produce fixers in six weeks.

Under this six-week method the apprentice is given the opportunity to observe and start working at once. Time table and instructions [on page 126] are result of actual

*Parts 2 and 3 will appear in early issues of TEXTILE INDUSTRIES.



One training method requires the learner-fixer to work with the overhaulers. Thus the intricacies of spindle plumbing, rail setting, roll maintenance, and thread guide adjustment are mastered under the critical eyes of the masters.

experiences and careful studies.

The operations are not listed in order of importance. However, as pointed out, all are important in the over-all training of the apprentice-fixer.

Actually, there are three time tables, each covering a period of two weeks. At the end of two weeks the time table is turned over to the second hand, completely filled in by the fixer-trainer. Generally, the fixer will know within a few days whether the apprentice will make the grade. Below is the apprentice fixer's time table for the first two weeks.

OBSERVATION cannot be overemphasized. Throughout the training program the apprentice will be constantly observing for faults, cause and remedy. The first observation is the position of all belts as soon as the frames start up at the beginning of the shift.

In most mills spinners start their own frames, with possible assistance from other sources (this is highly recommended). Frames with overhead belt drives must be checked at once for what is known as the "half-drive"—belts half on the cylinder pulley and half on the loose pulley. The belts must be fully shipped over, for the spinner in her zeal to get her frames started as quickly as possible may neglect to fully throw the shipper arm.

Half-drive belts not only slow down the frames with a resultant loss of production; the slippage that ensues may cause belts to smoulder and smoke from friction. What was first thought or "whiffed" as a hot-box on many occasion has turned out to be a smoking belt.

Everything else must be dropped and an investigation undertaken at once. There is always the danger of fire from this source. This first observation is carried out directly under the supervision of the trainer-fixer, as are all first observations—the cause, effect and remedy explained. After that the apprentice is on his own insofar as first observations are concerned. In this plant, all pulley end yoke boxes are oiled immediately after belt observation. It is important that every oil opening to all bearings, yoke boxes and housings, be shown the apprentice. Not one should be overlooked. All reservoir oil containers are clearly marked, such as, "Engine," "Roll," "Spindle."

Experience has shown that the two places most overlooked are the builder (with automatic bunch builder) and the draft gear housing. For the most part the apprentice will handle engine oil and under no circumstances should such oil be used for anything else and vice versa.

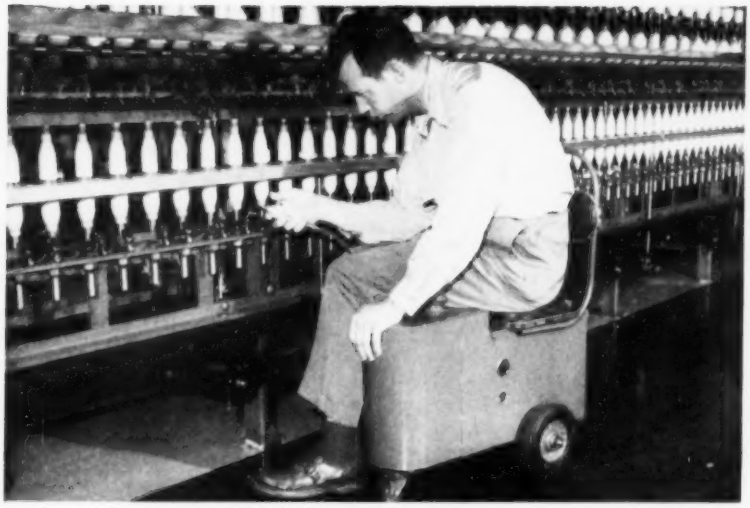
Oil is expensive, and all oil cans must be properly gauged to prevent overflowing. But also remember, one cylinder bearing burned out from lack of oil may cost hundreds of dollars in labor, material, and production loss.

APPRENTICE FIXER'S TIME TABLE

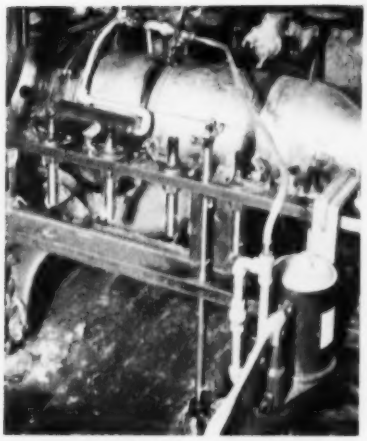
	FIRST WEEK	SECOND WEEK	REMARKS
OBSERVATION	✓	✓	Reported grinding sound in head end.
OILING	✓	✓	okay
SEWING TAPES	✓	✓	okay
CUTTING ROLL LAPS	✓	✓	okay
MISC.			Observed and assisted in changeover from warp to filling wind. Progresses.

WHEN observing tapes, look for the darkest, or oldest looking and ragged ones. Ragged ones should immediately be cut off. Check the pulley tension on the tape pulleys on the older tapes and if the tension tape pulley is all the way back (there is no more tension), cut the tapes and replace with new ones.

These tapes are the source of much trouble insofar as the quality of the cloth is concerned. The resultant loss of twist causes the



The learner should be taught early that spinning lubricants must be kept separated and plainly labeled. Any substitute for spindle oil is likely to do irreparable damage.



Teach him that lubricants are neither to be spared nor wasted. Lack of proper lubrication destroyed a bearing on this frame, necessitating spreading of cylinder to replace it.

yarn to appear as "cockle" or "sausage-like" in the cloth, definitely impairing the quality. These tensionless tapes can sometimes be recognized quickly as they "flap" around the whorl of the spindle or by deep sagging.

There are many ways to sew tapes. In most mills sewing is a matter of choice and no fast rule applies.

Careful instruction should be given in placing the new tape around the cylinder prior to sewing. This too is important—caution must be exercised to prevent adjacent running tapes from inflicting a "burn" on the arms, and also from being brushed off the tape pulley.

When the tape is sewed, check to see if the tape, or sewed splice, rolls with the whorl of the spindle and not against it. Tapes will last longer. The overlap of the tapes, when sewing, should not be less than $2\frac{7}{8}$" and not more than $3\frac{1}{8}$". A good average is 3".

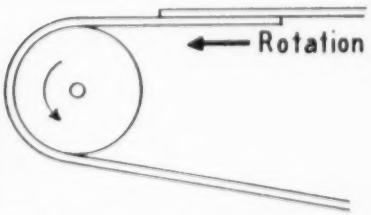
In this mill the full x type is used because of the double reinforcement of the diagonal and crosswidth stitches. However, any can be optional as long as they are sewed well and securely. In all these illustrations the sewing operation is continuous, with the thread cut only at the finish.

IN MANY mills spinners are forbidden to carry knives, and in this mill, where all top rolls are covered with synthetics, spinners are instructed to call the fixer when a top roll lap cannot be removed by a hook. Synthetic top rolls are costly, and great care must be exercised when removing such laps with knives.

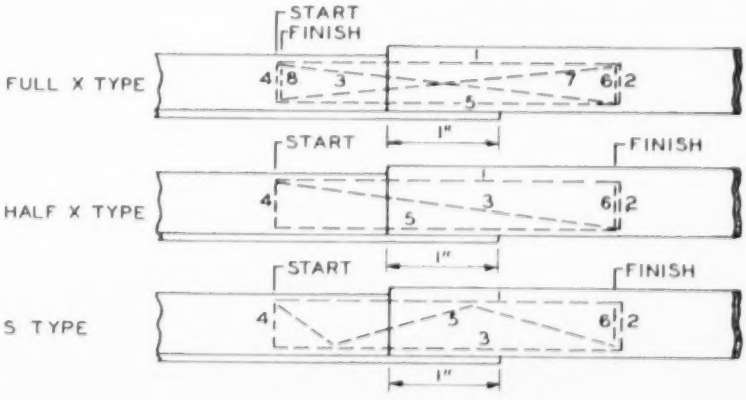
Experience indicates that any one of these three methods of sewing will give good results.

Always cut the lap away from the body and never towards it. As a safety precaution use a knife with a good gripping handle and a sharp blade that will cut cleanly with each stroke.

Always stress safety to the apprentice. Never let the apprentice do anything on his own, except observation, until he has been taught and shown. When cutting the lap from the roll do not cut clear to



Install the sewed joint to allow the double thickness to run around the whorl without "bumping" the raw edge into the turn.



the roll, whether leather or synthetic. Cut the lap until a small surface remains on the roll; the rest of the lap can usually be removed by hand.

A LARGE portion of the first two weeks will be spent in observation, to familiarize the apprentice with all operations. As the training program progresses into the following weeks, observation does not lessen as the apprentice takes on additional tasks. Details will be stored away in his memory, and knowing the answers, his questions on these details will be less frequent. He will know them.

The apprentice should be of a type who can get along with the spinners and doffers and all other employees who work in the section.

Familiarize the apprentice with the supply room. If valuable partsstock is solely in the custody of the fixer, stress such value and why it is kept locked up and under constant control.

Never allow the apprentice to use unsafe tools, and the fixer-trainer should never use any himself. Many mills supply tools for all operations, and many fixers have been known to buy additional tools. These should be safe and never left around the room.

In the final phase of the first two weeks training program, the trainer-fixer must carefully check and review once more with the apprentice all operations as listed. There will be much more perhaps to report to the second hand than what actually appears on the time table. If the report is going to be a favorable one, let the apprentice know. It will be a "tonic" to him. Apprentices in this mill receive two separate increases and a full fixer's wage at the end of six weeks when they take over a full section. This may vary slightly, but the objective is six weeks under the flexible schedule.

(To be continued)

Creslan acrylic fiber available for product development

■ Creslan, American Cyanamid Company's acrylic fiber, is now being produced in limited commercial quantities at a pilot plant in Stamford, Conn., according to a recent announcement. The fiber will not be generally available until late in 1958, it was said, but in the meantime, selected quality consumer products will be marketed and experimental lots of the fiber can be obtained for product development.

Pilot plant production is limited to these types: regular staple, high loft staple, and tow. According to the manufacturer, it is already known that properties of this fiber make it desirable for use in knitwear, sportswear, blankets, fleeces and simulated fur fabrics, dresses, men's and women's suitings and overcoatings, children's wear, and industrial fabrics.

Some of the advantages claimed for fabrics made of Creslan are: maximum comfort with minimum weight, wrinkle resistance and good recovery, easily washed or cleaned, exceptional dimensional stability, can be durably pleated, can be durably creased, irons quickly and easily, dyes easily in a wide range of beautiful colors from light to dark, non-irritating, moth- and mildewproof, and good resistance to ignition.

Production under mill conditions has shown that Creslan runs with excellent efficiency, in the 100% form or in blends with rayon or wool, on all existing systems of manufacturing equipment, according to American Cyanamid. By and large, practices that mills have been pursuing with other synthetic fibers can be used.

Considered by the producer to be of special interest are the following observations made in the mills processing the fiber:

1. On all systems the bulkiness of Creslan yarns requires a modification of yarn sizes spun, as well as twist factors applied.

2. Quality production is more rapidly reached under conditions of controlled atmosphere.

3. Generally, mechanical procedures of slashing applied to other acrylics and to acetate can be applied successfully, using either modified starches or synthetic sizes.

WET PROCESSING. Creslan fabrics require a uniform "prepare" for optimum results in dyeing.

Presetting in open width with hot water is desirable for fabrics with more than 50% of the acrylic fiber. With less, rope preparation may be used without presetting.

Kier boiling of fabrics containing this new fiber is to be avoided.

Carbonizing with sulfuric acid may be performed on Creslan-wool blends.

Desizing of fabrics can be carried out in the normal manner.

For 100% Creslan, a scour with 2-3% Decerosol NI for 15-20 minutes is recommended.

Fulling fabrics containing wool is readily accomplished. Fulling after dyeing is recommended to avoid crack marks.

Creslan is described by its producer as outstanding in the ease with which it can be dyed a full range of shades from light to dark, in blends or in the pure state, with a great variety of dyestuffs having good fastness.

Blends of Creslan with other fibers may be dyed in a number of ways to obtain solid shades, two-color, or heather effects through selection of dyes, pH control, and control of temperatures. The fiber can be dyed in equipment now in general use for raw stock, top, yarn, piece, and garment dyeing.

No special procedures are involved in finishing Creslan fabrics. Dyeing temperatures not over 250 F are recommended, although higher temperatures can be used for short periods of time. Drying with minimum tension will allow for relaxation.

For details on knitting Creslan, turn to page 197 of this issue.

Timing controls quality

Tachometers check material flow at Northern Dyeing

by Frank J. Percarpio
President
Northern Dyeing Corp.
Washington, N. J.
Exclusive

NORTHERN Dyeing Corp. has a successful experience record in the use of tachometers to control piece-goods dyeing operations. In Northern's production, "timing is of the essence." Timing is important in establishing and maintaining a scheduled rate of production, but that is only the beginning of Northern's interest in timing.

Timing is vital to our control of quality—sometimes it is a factor critical to the success of a process. With resin and silicone finishes, speed is highly important because chemicals employed in the finishes must be cured at definite temperatures for specified lengths of time. Exposure of cloth to temperatures excessive in degree or duration would cause the finish to break down.

Drying and cooling phases must also be regulated. Crocking and shading of the finish occurs if materials come off the line too wet. Speed of cloth travel through the processing is consequently to be controlled precisely.

Also, to gain the competitive advantage of low production cost, Northern has developed a continuous-flow production plan with work passing directly from one process to the next without any time wasted in storage. The operation of each machine, therefore, must be so controlled that it will take cloth at the same rate it is being fed to it from a preceding machine, process it, and feed it out at a speed acceptable to the machine next in line.

Old, experienced operators can give fairly close estimates of speed —within a few yards a minute— but younger, unskilled men generally have difficulty in calculating speed. Even a good estimate of speed, however, is not sufficiently dependable as a basis for a coordinated operation.

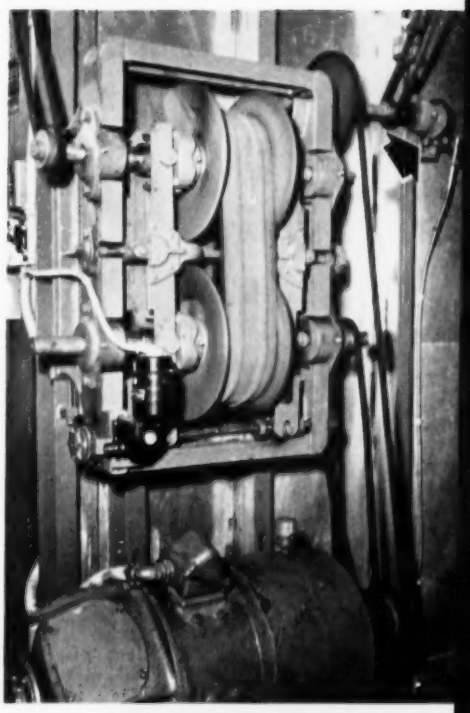
As Floyd G. Reynolds, Northern's plant engineer, puts it, "A lag of even a few minutes at one point will result in a shutdown of other operations. A speed-up or slow-down affects all our operations." Counters will record total amount of production, but they do not indicate rate.

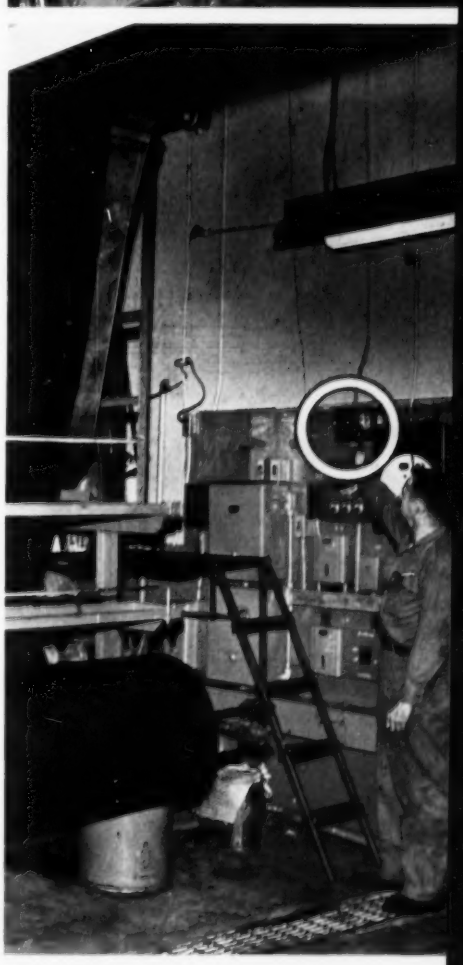
NORTHERN Dyeing Corp. production people have found that tachometers, installed on key machines, with the dials placed where they can be easily read, provide a constant check on the rate of material flow. Further, when an improved processing method or new chemical calls for a different rate of material flow, the tachometer on the key machine permits quick, accurate adjustment to the speed required. All other machines involved in the operation can then be set to run at the same tachometer reading.

In the accompanying photographs, a tachometer shaft drive gear is attached to the machine shaft. In this installation a right angle drive unit is employed to avoid a 90° bend in the flexible shaft. The tachometer drive shaft can be seen running vertically down alongside the machine drive.

Actually, the drive cable in this instance is 30' long, extending to the floor below where it connects to a dial located so that it can be

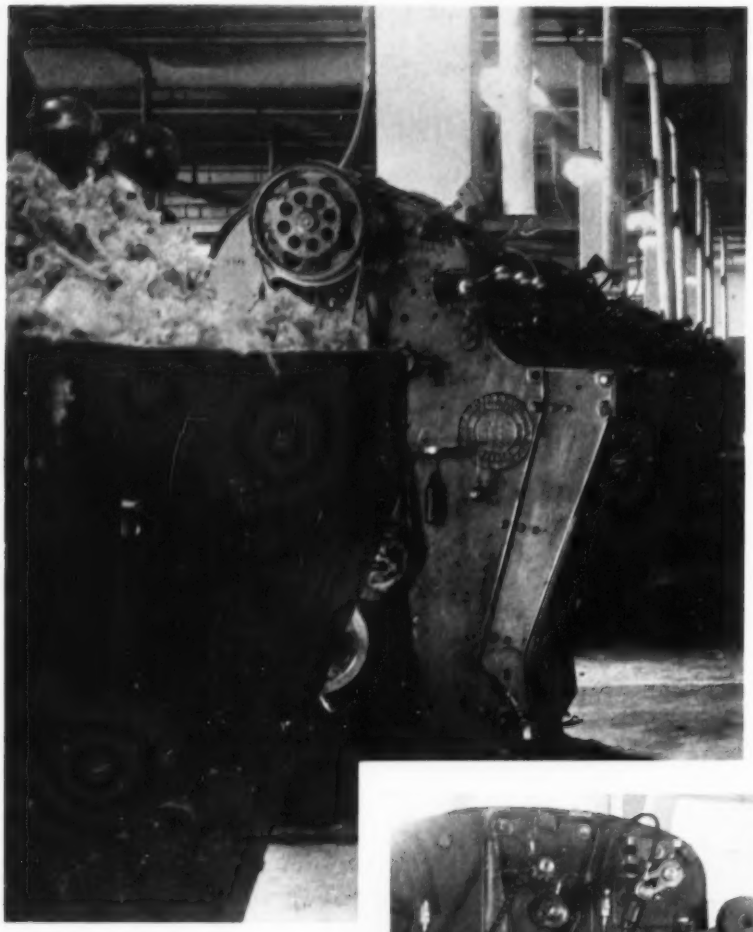
(Continued on page 197)





Tachometer shaft drive gear (arrow in photo at top) is attached to shaft on dryer drive with a right angle drive unit to avoid 90° bend in the flexible shaft. The 30-ft. tachometer drive shaft extends to the floor underneath the dryer, where dial (circled in photo below) is placed for easy reading by operative.

Running a slow spike apron can help to overcome the unevenness caused by the feed tender who cram-feeds and then allows the stock to run low.



Veteran boss carder shares his experiences in

Controlling Woolen Roving Weights

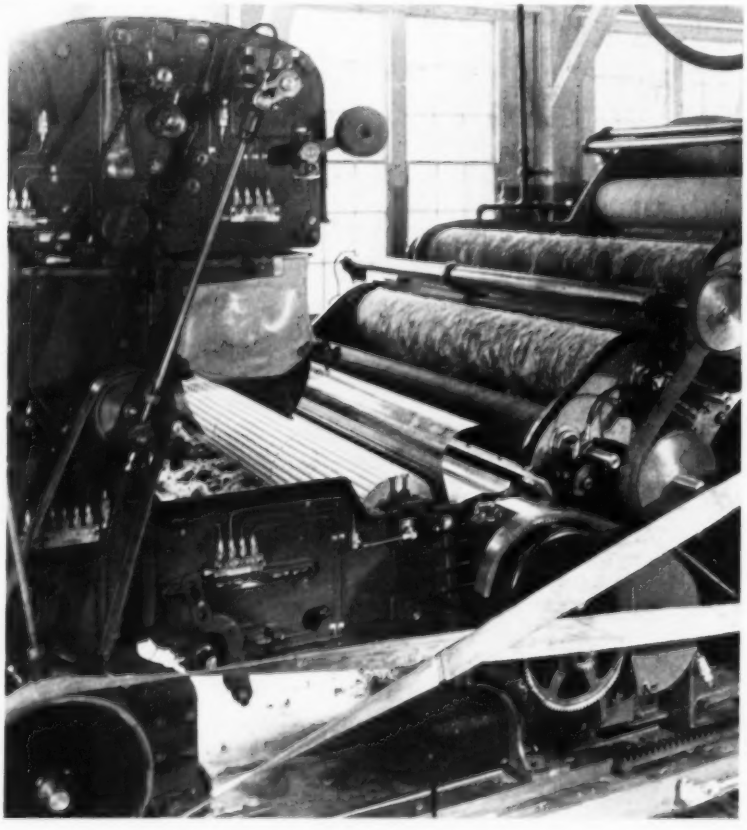
by Wilfred J. Deschenes
Quabbin Spinners, Inc.
Ware, Mass.
Exclusive

PICKER HOUSE is a name which should be discarded. Of the many reasons for this suggestion the most important one is this: When a man goes to work in a picker house he either already feels, or is made to feel by other operatives in other departments, that he has reached the bottom — that finally he has wound up in the "rear" of textiles.

This attitude toward this very important department has been brought about by, I suppose, some pretty smart people who knew very little about blending fibers.

To these fellows in the picker house, men fired in any of the processes following the blending — carding, spinning, etc. — goes

Two tips for better carding: Check the balance of the weigh pan—no one is infallible, much less the set-up man; pack the breast feed as much as possible.



the credit for poor fabrics. The carder, who usually bears the brunt of the troubles caused by poor blending, is expected to turn out good and even roving from poorly blended fibers.

The card is a very wonderful machine, and with people to give it proper management and care, it can turn out miracles. But it cannot correct in full the errors made in blending.

The answer to this problem lies in part to giving the department it's proper name — the "blending department." Spend a little time educating men in handling stocks and impressing them with the importance of their department in the manufacture of the fabric.

Most men take pride in doing a job well, and should be given a little encouragement and a little personal attention once in a while.

POORLY BLENDED stocks will not always cause a variation in weights, and many times a poorly blended batch will make a nice looking roving — roving which to all appearances will make good yarn.

Unfortunately, this roving made from poorly blended fibers will definitely show the ill effects of poor blending in that it will make an uneven yarn as it is drafted and twisted. Also it definitely will have a wide variation in tensile strength. The carder who doesn't have the protection afforded by a fair knowledge of blending will most certainly be put through the wringer.

Most mills still have manual feeds, so it is very important to make such feeds as fool-proof as is possible. We have always had, and will continue to have, feed tenders who cram-feed and then allow the stock to run low, which causes a sharp variation in weight.

This can be overcome to a great degree by running a slow spike apron. A spike apron that is going the least bit too fast means that the speed ratio between the spike apron and the whip or fly apron remains constant.

The clearing energy is increased and this will be noticed immediately by the way the whip apron throws the stock against the weigh pan baffle board; and it doesn't matter how well placed the baffle board is, at times the stock will be thrown too far forward to the breast side of the weigh pan and cause a light feed.

By lowering of the stroke of the comb, you can run a close comb setting for the reason that after the comb engages the stock it will pull away from the spikes rather than drive the stock deeper into the spike apron pins. This will greatly relieve the strain on all driving and driven parts of the feed box.

IT IS very important to get as good a combing as is possible. Therefore a close setting of the comb is important. This will also help to combat poor feed tending in that it will cut to a minimum the chances of overthrow of stock into the weigh pan.

If you are running a coarse long stock (or any stock that is very strong) then, rather than set the comb wider, lower the stroke of the comb. A spike apron comb with the normal setting will engage the stock at its peak strength, make the feed run very hard, cause the use of very tight belts, and at times through slippage miss making feed.

No one is infallible, much less the set-up man, so check the balance of the weigh pan. Do this by moving the weight on the weighing mechanism side as far as is possible, then balancing the pan with the counter weight on the arm at the opposite side of the weigh pan.

Being sure the weigh pan is properly balanced, set the trip assembly of the clutch as light as is possible — just short of having it trip by a jar of the feed box — and in that way you can get a faster and more uniform break as the weigh pan gets its weight.

Pack the breast feed as much as is possible. Of course this will be controlled by the type of stock being processed. By and large, the slower you can run the breast feed rolls the better for even weights.

If you have the smallest feed roll drive on, and the feed still has a thin streak, slow down the breast. This will not only help the feed but will increase the ratio of clearance between the breast cylinder and tumbler, and will help retain more of the tensile strength of the fiber.

THE FANCY is the most important roll on the card, and the one that requires the most constant checking. Volumes can be written on what it will do and will not do under certain conditions and on different types of stock, but in this discussion we are

Drafts and tensions at the condenser play a large part in roving evenness. Drafts should be as slack as the stock will allow. Wind the roving with the least possible tension.

primarily interested in weights.

A fancy that is poorly set or gets out of its setting — if it didn't we could throw away our wrenches and our gauges — will cause a sharp variation in weights for a long time before the cylinder shows a lapping sign.

A fairly good indication of this is in the roving weight, which may drop 10% or more or jump 10% or more above the required weight. It is rather interesting to note that an average of 10 weighings may easily show the required weight without the numbers being correct

The range of the weights is important. If the range varies excessively it usually is caused by the fancy not fully clearing the cylinder. When this occurs the cylinder is loading or building up under the faulty setting until the fancy is forced to clear the overloaded mass. Of course this causes a light place to form as the cylinder begins to load again.

It is very important to run the first breaker doffer as fast as is possible. This will help control the weight, cut down the amount of waste under the first breaker cylinder, and help lay more laps of web on the middle feed table. If, in speeding up the first breaker doffer, a very thin place results in the center of the over-draw, slow down the aprons and that will fill in the light place in the web.

If the over-draw is allowed to run through with this thin place in the center, the web will have a tendency to fold at the middle feed tumbler rolls, and this will cause a variation in weights.

Pack the middle of the feed with as many layers of the over-draw web as is possible. The fact that the over-draw laps at the middle feed is far from being enough to insure even weight. This condition can readily be detected by feel and sight.

Pulling in at the middle feed rolls is so prevalent when a feed has light places, because the tension at the feed rolls is uneven when the doublings are fed in at a fairly sharp angle, thus increasing the danger of light places being pulled in by the licker-in. So, pack the feed and help yourself to insure good even weights.

AT THE CONDENSER the drafts and tensions play an important part in weight and tensile strength control. Many times a well-carded and well-blended type doffer web can be ruined at the condenser because of faulty drafts.

Since rub aprons wear down unevenly, thus making a difference in apron surface speeds, there is no set rule as to the size of draft gears to be used. The draft gear will be governed by the weight of the roving at each bank.

A good sound rule to follow is this: Run your drafts as slack as the stock you are running will allow. Slack drafts protect and hold the tensile strength of the blend, which is always important — especially when the blends being processed are on the borderline in strength.

Check all tape rolls often to make sure that they all turn freely. One of the most noticeable results of a tape roll not turning freely, which in turn causes tape slippage, will be a quick and definite variation in weights from bank to bank. These variations will occur just as if big changes were being made with the draft gears. It is much better for the life and efficiency of the tapes to run them as slack as is possible. This makes it doubly important that the tape rolls do run freely.

THE WINDING DRUMS are also important. Wind the roving with the least tension possible. But bear in mind that the blend being processed is made up of slippery stocks so you may have to wind the roving tighter on the spool because of the reverse or unwinding process on the spinning mule or frame.

I hope that these few hints on weight control will help a few of the fellows who are just getting started in the constant fight to control textile fibers; and if these hints do help someone, I will deserve in some measure the help I've received from some very fine men.

More interest in shorter hours of work

■ Organized labor's growing interest in reduced hours of work as a key objective was pointed up at the American Federation of Labor and Congress of Industrial Organizations (AFL-CIO) Conference on Shorter Hours of Work held in Washington, D. C., last fall.

In the November, 1956, issue of *Monthly Labor Review*, a publication of the United States Department of Labor, Seymour Brandwein of the AFL-CIO Department of Research was reported to have told the conferees that where an industry or company with a 40-hour week has provided year-round full employment (and some overtime work), union bargaining attention has been directed almost entirely to gaining wage increases and benefit improvements, not to reduction in hours schedules; but where technological and economic developments have threatened displacement of operatives, many unions quickly have turned to consider the possibility of shorter hours of work as a means of stabilizing employment.

The textile industry was cited by Nat Goldfinger, one of Mr. Brandwein's coworkers, as an example of an industry group in which technology has contributed to declining employment.

Continuing, he pointed out that the full-fashioned hosiery industry indicates the problems confronting operatives in most branches of the textile industry.

In Mr. Brandwein's opinion, reductions in hours probably will continue to be negotiated most commonly in small, gradual stages —2½ hours or less at one time.

Speaking on the costs of reducing hours, Mr. Goldfinger said that the costs to employers may be viewed as similar to the costs involved in wage increases.

Mr. Textile Operating Executive, are you a

Good House(mill)keeper?

Use this superintendent's excellent housekeeping suggestions as a check list for conditions in your plant

by J. Lamar Moore
Superintendent
The Kendall Co.
Albertville, Ala.
Exclusive

HOUSEKEEPING is one of the most important factors in accident prevention. People trip over loose objects on floors, stairs, and platforms; they are hit by articles falling from overhead; they slip on greasy, wet, or dirty floors; they run against projecting, poorly piled or placed materials; improperly piled or supported materials fall on them; they step on or tear their hands on projecting nails.

Housekeeping is more than cleanliness. It is cleanliness *and order*. A place is in order when there are no unnecessary things about, and when those that are necessary are in their proper places.

If it is clean also—floors not slippery from grease, etc., light bulbs and windows clean, walls, etc., kept well painted, machinery and equipment kept neat and in order, and if aisles are properly marked and operations are carried on in an orderly manner—we have good housekeeping and good order. Incidentally, where we find these conditions we find competent management and a low accident rate as well, for good housekeeping and orderliness are fundamentals of good management.

GOOD HOUSEKEEPING cannot be obtained by an occasional grand clean-up and setting-in-order. It must be planned and continuously pressed. When one undertakes to secure improvement in housekeeping the first thing to try to get is a thorough clean-up. But unless management accepts the idea of getting at least a reasonable degree of order and system into all operations, conditions will soon be as before.

But if, in addition to a clean-up, management will adopt a policy of searching out and correcting the conditions that produce the dirt and disorder, and will undertake to plan all operations systematically, lasting improvement will result.

Bad housekeeping is a major cause of fires, for a very large proportion of plant fires start in rubbish or in oil soaked clothes; or are made more serious by the presence of unnecessary flammable or readily combustible materials on which to feed.

While the employee should wish to do his part toward keeping his work place clean and orderly, the responsibility rests with management. For management must plan all operations if they are to be orderly, must provide storage place for materials, racks or holders for tools and portable equipment, or containers for materials in process, and in general see that each day housekeeping and order are maintained as fundamentals of all that is done.

Finally, management must train each employee to do his part, for a single bad housekeeper in an establishment not only leaves much disorder in his path, but sets an example which can disrupt the morale of all.

THE MORE IMPORTANT details of good housekeeping and order are:

A. Handling, storing and placing of materials, articles and supplies. Satisfactory control requires careful consideration of all factors of tonnage and volume of materials to be handled, the amounts required at the successive steps of the process, allowance of the spaces necessary, and the methods to be used in handling and transporting the materials and articles.

B. Methods of piling materials and articles. These must be worked out for each class of material or article. Important points are:

1. Height of pile. This is dependent upon the character of material and the consequent danger of toppling, the means used in piling and removal, the traffic nearby and interference with sprinkler operation.

2. Strength of support. Allowable floor loads should be posted.

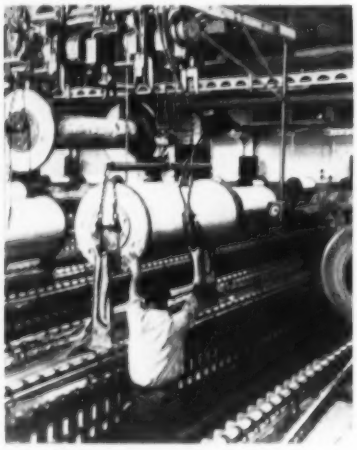
3. Evenness of support and its continued stability. This condition often exists in yard piling where uneven ground, non-homogeneous ground or moisture may cause toppling, and on first floors or in basements where floors may slope or sag.

4. Location. Aisle traffic or the presence of work benches or machines may make it necessary to limit the height or character of materials to be piled in otherwise desirable space.

5. Piling small articles. Containers suited to the nature of

The scrap pile is often a "back yard" fixture —an eyesore. Even scrap can be contained neatly.

Progressive management is constantly seeking a better way to handle materials. Strong-arm methods are not only old-fashioned; they produce "aching backs."



The safe height of the material pile depends upon such factors as the means of piling and removal, the danger of subsequent toppling, aisle space, sprinkler interference, etc.

the articles are commonly used. These usually take the form of wheeled or truck pick-up containers that receive the articles from work bench or machine. A useful modification for such articles as small cans are trays which can also be stacked.

6. Pipe or other long objects. Suitable racks aid handling; projecting ends should be protected by location, railings or barriers.

7. Mechanical aids. The use of strong-arm methods instead of some form of stacker, piler, hoist, or carrier is a fault commonly found. Progressive management is continuously seeking better methods of piling and incidental handling.

C. Tool housekeeping. Racks and holders suited to the size and shape of the articles, should be provided for all hand tools, jigs, and such machine fixtures as chucks, cutters, blades, etc. Frequency of use, value of articles, the possibility of damage, and the system of maintenance used will determine the location of such racks. Obviously, tools frequently used at a bench or machine should be provided with racks or holders on the bench or at the machine. Wheeled racks holding a set of the tools and parts needed at a given machine or station are often very helpful.

D. Disposal of scrap and waste. The old way is to let the floor catch the waste and then clean it up from time to time. Competent management, however, estimates probable waste in advance and provides suitable means of collecting it as it is produced and disposing of it in the most economical and orderly way possible. An intelligent interest in keeping waste and scrap down helps both safety and profits.

E. Clear marking of aisles and of spaces reserved for storage with prohibition of piling or placing materials or articles in aisle space.

F. Leaks, drips and spillage. Oil pans, splash guards and drip pans can be used to keep oil off floor. Proper means of oiling and good maintenance reduce dripping. Means of handling liquids should take spillage into account. Good construction reduces leaks.

G. Width and layout of aisles. Aisles too narrow for safety are also too narrow for efficiency.

Too-narrow aisles is a very common fault. Aisles carrying considerable powered truck traffic should be three feet wider than twice the width of the trucks.

H. Layout of machinery and equipment. This is, of course, a function of production rather than of housekeeping as such, yet the provision of adequate space and the proper arrangement of the various production units are so vital to housekeeping and order that they must be mentioned here.

A common mistake of management is to add machines or other production units to already well filled floor space, thereby not only increasing the accident hazard but often decreasing the efficiency of the whole room due to overcrowding.

PROJECTING nails present a serious hazard. Nails left projecting when kegs, barrels or boxes are opened constitute definite invitations to injury. So do nails in planks or boards.

Nail punctures are particularly likely to become infected often by tetanus (lockjaw) germs. When kegs or barrels are opened the nails should either be drawn or bent over and the points hammered into the wood.

They should be drawn from boxes or driven home. Nails should be drawn from boards and planks for if the lumber is ever used again, they will have to be pulled out.

Nails left in planks often ruin saws and may cause serious accidents. Even if boards removed from boxes, crates, forms, etc., are to be burned, it is better to draw the nails in order to avoid nail wounds in the handling.

When demand for production increases there is a constant temptation to relax such housekeeping rules as those covering the piling of materials and articles. Sometimes there may be no alternative; but usually other means of relief can be found.

If management authorizes the relaxing of any such rules, the return to the proper condition should be required at the earliest possible moment.

Regardless of production necessities, material should not be piled

so high or in such a manner as to constitute a hazard. If the operator of a machine requires a definite amount of space for safety in ordinary times, he needs it even more when under pressure of demand for maximum production.

In addition to humanitarian consideration the employer will be wise to remember that the injury of a worker can be especially expensive when production is needed.

Just as in every other phase of safety work, the interested cooperation of the entire working force is necessary. The management must first (if conditions are bad) set things in order generally and provide whatever equipment or other specific aids may be needed.

Many firms use special clean-up squads that go from department to department in orderly routine. Specific duties (window washing, emptying waste cans, sweeping, etc.) are preferably assigned to certain men. This is in the interest of both safety and efficiency, as the safest and best methods can thus be more effectively worked out and practiced.

Special clean-ups are helpful in the plant just as in the home. Employee interest and cooperation may be stimulated by such announcements as: *"Clean-up week begins Monday, August 22. Everybody get ready for the grand clearance. Old clothes, greasy rags, waste and junk must go."*

A housekeeping committee (or committees) which inspects all departments regularly stimulates employee cooperation. The various departments should be represented on the committee and membership should rotate.

An excellent stunt is to award some kind of derogatory banner or symbol each month to the worst department to be kept on display until some other department receives it. Another way is to award a complimentary symbol or prize each month to the best department.

Housekeeping control should include all out-of-the-way places—roofs, overhead beams, shelves and ledges, yards, small out-buildings and sheds, unloading trestles, cellars, basements, boiler rooms. No place, room or department should be overlooked.

Scarcely separable from a program of good housekeeping is a planned program of painting.

Aisles used for both vehicular and pedestrian traffic should be wide enough to assure the safety of the pedestrians and to give ample room for the truck traffic.

However much the individual employee wishes to cooperate in the housekeeping program, management must provide the impetus and the equipment before the sentiment can be translated to proper action. Note how neatly these baskets of yarn are stacked awaiting transfer to the finishing plant.

Gins cause

by J. L. Delany
General Superintendent
Joanna Cotton Mills Co.

THERE have been a large number of cotton mill tests* made on the effects of heat at the gin on the spinning and weaving operations. At Joanna Mills we have been directly associated with one of the very first — sponsored by the National Cotton Council. This was a cooperative test between a number of gins, gin manufacturers, and the textile mills. It was quite a test, and positively proved that high heat at the gin was harmful to the spinning qualities of the fibers.

A second test was later run by the member mills of the Institute of Textile Technology. Joanna Mills shared in the spinning tests in this project, which confirmed the positive findings of the first test.

The mills affiliated with the Textile Research Institute ran a third test, part of which was conducted on Joanna spindles. This also proved that high gin heat is detrimental to the processing characteristics of cotton fibers.

Finally, the most recent test was run at Joanna Mills by I.T.T. This time the effect of the type gin equipment, as well as the exact degree of heat applied, was determined. The results of this test are the chief source of information for what follows.

Just as the ginners have advanced far beyond the old-fashioned country gin, so have the textile mills progressed both in the matter of machinery as well as in process control through better knowledge of the fiber. For example, it has only been in the last few years that the fineness of the cotton fiber became an item that could be held under moderate control. It can't be held under positive control because the conditions under which the crop is made can vary the fineness; and up to now weather conditions are beyond our control. Yet, unregulated mixing of coarse and fine fibers can adversely affect the good running of a mill.

THE TENSILE STRENGTH of a cotton can now be accurately determined in a relatively short time. By properly regulating blends, it is quite possible to provide a mix uniform in strength and free from weak running lots. By means of the Shirley Analyzer it is possible to check the amount of waste or nonspinnable fibers in a given bale; and with this information, undesirable bales or lots may be culled or spread thinly through the mix.

The Fibrograph will rapidly draw one a picture of the profile of the fibers in the bale. It will tell you the upper half mean length, the mean or average length, and the uniformity ratio of the sample. This last is a gauge of the even-running qualities of the cotton in the bale. This Fibrograph is also a useful tool in the mill, where it is used as an indicator to show if there has been any degradation in the staple as it passes through the processing machines.

Along with these particular tools having to do with fibers are the tools for checking processing variables: the electronic picker lap tester, the sliver tester, the roving and yarn uniformity analyzer, the electronic yarn imperfection counter, the standard skein

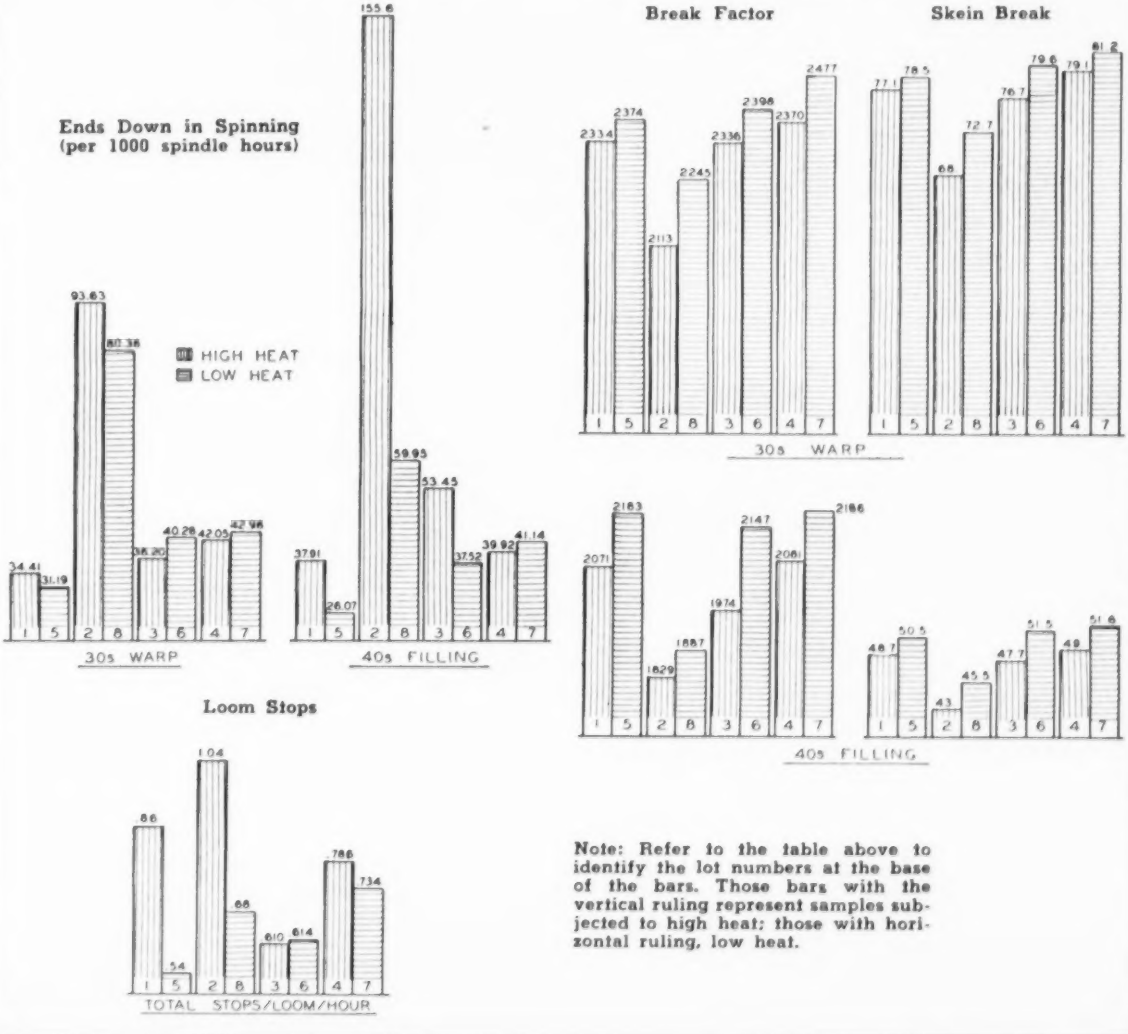
*For details of the tests referred to by Mr. Delany in the introductory paragraphs to this article, see the following in previous issues of TEXTILE INDUSTRIES:
1. "Inter-Industry Gin-Spin Tests," June, 1952, pp. 110-112, 229; also "The Relation of Mill Processing Conditions to Yarn and Fabric Properties," Oct., 1952, pp. 111-126.
2. "When Gins Over-Dry Cotton," March, 1954, pp. 171-172.
3. "Over-Drying Cotton at Gin," Nov., 1954, p. 135.

much of our trouble—Delany

EFFECT OF HEAT AND GINNING ON OPENING, PICKING, CARDING (Waste and Neps)

	Murray Saw		Shirley Unit & Lummus S.J.		No Lint Cleaner		Lummus Super Jet	
	High Heat	Low Heat	High Heat	Low Heat	High Heat	Low Heat	High Heat	Low Heat
Lot number	1	5	2	8	3	6	4	7
Opening waste (%)	0.25	0.34	0.15	0.39	0.42	0.38	0.30	0.45
Picking waste (%)	0.68	0.55	0.29	0.43	0.81	0.78	0.45	0.84
Card waste (%)	4.37	4.32	4.34	4.16	4.79	4.64	4.34	4.94
Card neps	59	50	102	84	44	50	40	45

EFFECT OF HEAT AND GINNING ON SPINNING AND WEAVING



Note: Refer to the table above to identify the lot numbers at the base of the bars. Those bars with the vertical ruling represent samples subjected to high heat; those with horizontal ruling, low heat.

break tester, and the electronic moisture tester. Furthermore, we have the up-to-the-minute statistical quality control systems along with the practical and empirical know-how built up over these many years to produce a quality product in a highly competitive field.

With all these, one would think running a cotton mill would be a cinch. But in spite of this magic, we still run into variables which cause very considerable trouble in our spinning and weaving sections.

JOB LOADS in a cotton mill were at one time set up by the department overseer, who would be the judge (along with the superintendent), of what the job assignment would be.

Nowadays, industrial engineering has stepped in and taken away the heavy burden of figuring job loads from supervision.

The best methods of doing the job are chosen, and the new techniques are offered to the employees. Various items of a mechanical nature are pointed out to the supervisor and these are then corrected in order to put the job in a first class mechanical condition. Then the chief industrial engineer, the superintendent, and the supervisor all get together and settle on the proper job load.

The installation of the new job loads then takes place, being careful to omit any first or last day of the week, in order to get away from substandard conditions, and to avoid too hasty installations which would be detrimental to morale.

Usually, there is a shakedown period as employees become accustomed to the new routine and adjust themselves to a new schedule.

One would think that with all this technology, this experience, this long-haired engineering "savvy," the mill would run itself. However, bewildering lapses in the running qualities of our work continue to confound and bedevil us.

GOOD RUNNING work in the mill is the finest morale builder that there is. One can offer all sorts of wage incentives and fringe benefits, yet he is a dead pigeon if he has not good running work.

Take, for instance, spinning end breakage. Here you are dealing with female employees among whom are a good many young mothers and homemakers. They accept mill work because it offers them extra money for all the "goodies" advertised for modern living.

Yet, they are also homemakers, and must properly maintain their home, look after their children, and tend to their social and church obligations. All this must take place after they leave work.

Yet, if the work runs poorly, they become overworked, overloaded, and very much disgruntled. Good relationship is gone and conditions must be quickly changed in order to free them from the overload *even if the spinning cost is increased.*

The same situation prevails in the weave room. Weak threads will fail under tension in the weaving operation, break, and the loom will stop. The weaver's load is calculated on so many start-ups per hour; and when too much weak yarn is encountered, the load goes up, the efficiency and pay go down along with the quality. With all this goes the morale of the personnel as well as good feeling among people.

WHAT THEN has happened? Our control charts point out that normal staple, fineness, grade, uniformity, variation, and other fiber characteristics prevail. The room conditions such as humidity and temperature are satisfactory. The mechanical condition of the machine is excellent — what then is the trouble?

We at Joanna are thoroughly convinced that overheating at the gin is one of our "unexplainables." Technology has not yet pointed out a sure and certain method of putting our finger on a given lot of cotton and saying, "This cotton has been overheated at the gin."

However, we can process lots of cotton under different gin heats and prove beyond a reasonable doubt that the overheated cotton will be weaker in tensile strength, cause more ends to come down in the spinning room, and produce more loom stoppage in the weave room. Here then are the results of the most recent ITT tests made at Joanna Mill on "The Effect of Heat and Ginning Machines on Mill Spinning and Weaving."

Under the supervision of ITT technologists, lots of cotton were picked out with the idea of getting as much similarity as possible. Eight different lots of five bales each were set up and processed at the gins as follows:

Lot #1—Murray saw type lint cleaner—high heat (In 340 out 215 F)

Lot #2—Lummus Super-Jet lint cleaner and Shirley unit—high heat (340 - 215 F)

Lot #3—No lint cleaners—high heat (340 - 215 F)

Lot #4—Lummus Super-Jet cleaners—high heat (340 - 215 F)

Lot #5—Murray saw-type lint cleaner—low heat (In 160 out 145 F)

Lot #6—No lint cleaners—low heat (160 - 145 F)

Lot #7—Lummus Super-Jet cleaners—low heat (160 - 145 F)

Lot #8—Lummus Super-Jet cleaners and Shirley unit—low heat (160 - 145 F)

As you can readily see, we have three types of gin set-ups plus the fourth with no cleaners at all. Each of these set-ups ginned cotton at both high and low heat. These bales were shipped to Joanna, and, under the supervision of ITT engineers, were processed in our regular manner. All the stock was passed through the same machines to reduce any chance of machine variation.

Wastes made in the opening, picking, and carding operations were very carefully collected and weighed in order to find the per cent of waste loss. After each lot was run, the machines were thoroughly cleaned and no pains were spared to insure the validity of this test either by the ITT staffers or the Joanna lab staffers, who did the actual work.

In the box [on page 137] is a summary based on the comparison of the same gin units operated under both high and low heat conditions. The cotton used was 1 1/16" Memphis; five bales were run in each lot.

For a further study of the results, examine the bar graphs.

Tracing defects with the Uster evenness tester

A standardized approach saves fumbling and guesswork

by Ernest R. Beckner
Statistical Quality Control
Wennonah Cotton Mills Co.
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Exclusive

AT WENNONAH, quality control is one of the functions of the industrial engineering department. All control charts, evenness testing, and special tests are handled by a man specifically assigned to that job. This article will deal with only one phase of the quality control function—the use of the Uster evenness tester.

At this writing, the Uster has been in service for approximately three years, hence "the cream has been skimmed off the top." Identifying mechanically induced unevenness now requires much closer scrutiny of charts. Distinguishing between drafting unevenness on one hand, and mechanically induced unevenness (of a lesser magnitude) on the other, becomes difficult.

When this difficulty arises, it is better to run a second chart on the same material and delivery (perhaps ignoring the CV), using a smaller ratio of material to chart for closer scrutiny. A six-inch steel scale, one inch at least of which is graduated in hundredths, is most convenient for analyzing these charts.

SINCE an engineer takes nothing for granted, chart and material speeds of the tester must be checked. Check rpm of feed roller on tester at all speeds with a tachometer. Measure diameter of feed rolls with calipers. Then 3.1416 multiplied by diameter in inches, times rpm, and this divided by 36 inches per yard equals actual yards/minute.

Check chart speed with a stop watch between two definite marks, then measure accurately and compute chart speed in inches/minute.

Measure the length of calibrating tape from splice to splice on a steel tape. Then run a test pattern at known material feed and chart speed. By measuring accurately on the chart the distance covered by five or ten complete revolutions of calibrating tape, you have a double check on the previous calculations.

This done, it is now possible to compute with greater accuracy the ratio of material to chart table used to find the distance between repeating blips as recorded on the chart. [See Table 1 below.]

USING actual speeds obtained previously, make up a table of ratios of inches of material/inch of chart. With this ratio known, it is simply a matter of multiplying this ratio by the distance between blips on chart to find actual length of repeats in material.

For suspected repeats close together, select a lower ratio which will space blips on chart far enough apart for convenient measuring. When considering blips of a lesser magnitude occurring regularly, there is some question about the frequency with which you can expect normal drafting unevenness to counteract one of these blips. If there is actually a mechanically induced unevenness, it will crop up again in step with the original repeats.

There is a further question of how much these blips should vary, plus or minus, from a strict pattern, and still be a basis for action. Experience indicates that this variation will be very small, percentage-wise. Drafting unevenness, or drafting waves, will often appear

TABLE 1
INCHES OF MATERIAL PER INCH OF USTER CHART

Chart Speed		Material Speed					
Cm/Min	In/Min	72"/Min 2 ypm	144"/Min 4 ypm	288"/Min 8 ypm	900"/Min 25 ypm	1800"/Min 50 ypm	3600"/Min 100 ypm
2.5	.984	73.2	146.4	292.8	915.0	1830.0	3660.0
5	1.968	36.6	73.2	146.4	457.5	915.0	1830.0
10	3.937	18.3	36.6	73.2	228.75	457.5	915.0
25	9.842	7.32	14.64	29.26	91.5	183.0	366.0
50	19.685	3.66	7.32	14.64	45.75	91.5	183.0
100	39.370	1.83	3.66	7.32	22.88	45.75	91.5
Sensitive Lengths on "Inert"—In.*		6.0	11.92	24.0	75.0	150.0	300.0

*Minimum lengths between blips which will record on "Inert Test" at each material speed.

TABLE 2

STANDARD PROCEDURE FOR TRACING DEFECTS WITH THE USTER TESTER

	Card Sliver			Drawing Sliver			Roving			Yarns		
	Compare CV Short Term	Short Term Variation	Long Term Variation	Compare CV Short Term	Short Term Variation	Long Term Variation	Compare CV Short Term	Short Term Variation	Long Term Variation	Compare CV Short Term	Short Term Variation	Long Term Variation
Chart Feed Cm/Min	10	25		10	25	5	10	25	5	10	10	2.5
In/Min	3.937	9.842		3.937	9.842	1.968	3.937	9.842	1.968	3.937	3.937	.984
Material Speed, ypm	4	4		4	4	4	4	4	4	8	2	8
Ratio, Material/Chart	36.6	14.64		36.6	14.64	73.2	36.6	14.64	73.2	73.2	18.3	292.8
Sensitivity Range, %	25	12.5		25	12.5	12.5	50	50	25	100	50	100
Service Selector	Normal	Normal		Normal	Normal	Inert	Normal	Normal	Inert	Normal	Inert	Inert
Chart Length, In.	15	24		15	24	24	15	24	24	15	24	24
Time, Min	3.82	2.44		3.82	2.44	12.2	3.82	2.44	12.2	3.82	6.1	24.4
Material Tested, Yd.	15.28	9.75		15.28	9.75	48.80	15.28	9.75	48.80	30.56	12.20	195.2

to repeat regularly to the unaided eye, but when measured with a scale, it will be found to vary from ten to twenty per cent.

Another approach to use when there is a suspected repeat is to run another chart on the same delivery, and superimpose one chart upon another in front of a strong light. If there is a mechanically induced unevenness, it will show up in this way. Uster makes a special semitransparent or translucent tape which is ideal for this purpose.

TABLE 2 on this page may not be usable in some mills exactly as they are printed. For instance, if the feed rolls on the tester are undersized, having been buffed, the material feed will be slower.

The standard procedure chart may not be adaptable in its present form to use in certain mills. The general idea is to set up a similar standard practice so that successive tests will be comparable, and to avoid fumbling and guessing when deciding what material and chart feeds to use.

On card sliver, for instance, 12.5% sensitivity is practical only if picker lap variation is low. If you plan to test card sliver for picker lap variation, a similar "Long Term Variation" column under "Card Sliver" (Table 2) would apply, and would probably be the same as similar columns under drawing and roving.

The last two columns under "Yarns" may vary between coarse and fine counts, carded and combed yarns; therefore material-to-chart ratio, sensitivity, and service selector combinations must be chosen to suit individual circumstances. When using "Inert" test for long term variation, consider carefully the material speed. Because of the five-second reaction time of the tester on "Inert," it is possible to filter out everything under six inches, for instance, using 2 ypm, or everything under 11.92 inches using 4 ypm, and so on. On "Inert," everything less than these lengths is filtered out for both the integrator and the recorder.

Once the ratios, sensitivity, etc., are chosen, make a record of them on the standard procedure chart so that the next time a similar situation arises it will not be necessary to do a lot of experimenting before finding the correct combination.

A TABLE of repeats for machinery in each manufacturing process in the mill is an important timesaver. Figure 1 is an example for finisher drawing.

The position of rolls and gears is conventional, but the gearing ratio is hypothetical. Drafts in each zone are practical, including a 1% tension draft between feed rolls and calender rolls. This set-up is for finisher drawing, 6 ends up (54-grain card sliver) delivering 56-grain sliver. Weights on rolls, roll settings over staple length and rate of delivery, all are beyond the scope of this article.

Note that no defective gear will cause an unevenness from back roll 1. A broken tooth, for instance, on the 20T, 84T, 50T, or the 61T gears will cause rolls 1 and 2 to pause alike. Likewise, a broken tooth on the 27T, 29T, 45T, or the 21T (on end of roll 2) gears will still affect roll 2. Now, if there were an idler gear between the 45T and 21T gears, a broken tooth on it would make two defects per revolution, both from roll 2.

When dealing with yarns, correction must be made for twist contraction. Hence, frequency of blips multiplied by ratio of material-to-chart, multiplied by one plus twist contraction equals frequency in yarn.

To the calculations for repeats, there have been added three columns giving repeats on the chart at three different ratios. It would not be practical to measure all of these repeats (if they did exist) at any one chart speed. This demonstrates why the standard procedure chart has three columns under each process.

THE POTENTIALITIES of the Uster evenness tester have not all been explored. We do not yet know exactly the limits of what can be accomplished with it. Some research, both organized and individually, is going on at this time. Out of this, we believe, will emerge an exact science of an inestimable value to quality control.

Everyone using these evenness testers can make contributions to this science by intelligent planning and use of these instruments, and then by reporting his findings. It is urgently recommended that all in-

structional material supplied by the manufacturer be studied thoroughly, and reviewed at regular intervals.

Those who developed these instruments had to do a tremendous amount of research and development before they were ready for the market. However, having reached the market, the phase of individual application must be developed by the users.

FIG. 1—TABLE OF REPEATS FOR FINISHER DRAWING

Calculations for repeats

Roll 1: $1.125'' \times 3.14 \times 5.74 = 20.277$

Roll 2: $1'' \times 3.14 \times 1.10 \times 2.917 \times 1.009 = 10.166$

Roll 3: $1'' \times 3.14 \times 2.917 \times 1.009 = 9.242$

Roll 4: $1.25'' \times 3.14 \times 1.009 = 3.960$

Calender roll: $2.00'' \times 3.14 = 6.280$

30-tooth gear on Roll 3—Same as Roll 3 = 9.242

27- or 42-tooth gear between Rolls 3 and 4: $\frac{27}{30} \times 9.242 = 8.318$

20-tooth gear on Roll 4: $\frac{20}{42} \times \frac{27}{30} \times 9.242 = 3.961$

21-tooth gear on Roll 2—Same as Roll 2 = 10.166

29- or 45-tooth gear between Rolls 1 and 2: $\frac{45}{21} \times 10.166 = 21.784$

27- or 61-tooth gear Roll 1: $\frac{27}{29} \times \frac{45}{21} \times 10.166 = 20.282$

84- or 50-tooth gear between Rolls 1 and 4: $\frac{50}{61} \times \frac{27}{29} \times \frac{45}{21} \times 10.166 = 16.624$

20-tooth gear Roll 4 (from Roll 2): $\frac{20}{84} \times \frac{50}{61} \times \frac{27}{29} \times \frac{45}{21} \times 10.166 = 3.958$

20-tooth gear Roll 4 (from calender roll: $\frac{20}{46} \times \frac{29}{20} \times 6.28 = 3.959$

29- or 46-tooth gear: $\frac{29}{20} \times 6.28 = 9.106$

20-tooth gear on calender-roll—Same as calender roll = 6.280

Drafts

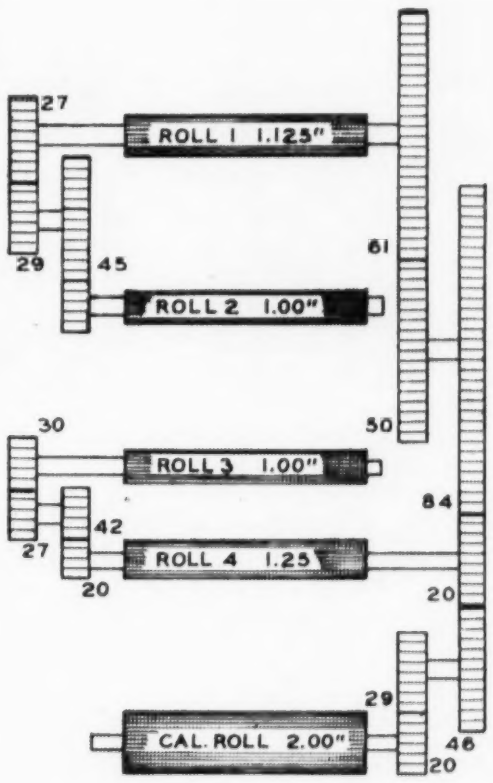
Roll 1 to Roll 2: $\frac{1''}{21} \times \frac{45}{29} \times \frac{27}{1.125''} = 1.773$

Roll 2to Roll 3 $\frac{1''}{30} \times \frac{27}{42} \times \frac{20}{20} \times \frac{84}{50} \times \frac{61}{27} \times \frac{29}{45} \times \frac{21}{1''} = 1.100$

Roll 3 to Roll 4: $\frac{1.25''}{20} \times \frac{42}{27} \times \frac{30}{1''} = 2.917$

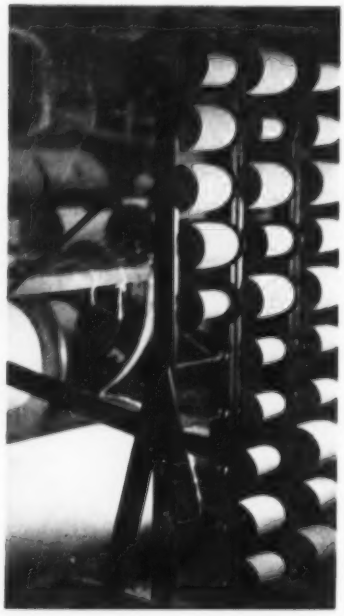
Tension Draft: $\frac{2''}{20} \times \frac{29}{46} \times \frac{20}{125} = 1.009$

Total Draft: $\frac{2''}{20} \times \frac{29}{46} \times \frac{84}{50} \times \frac{61}{1.125''} = 5.742$

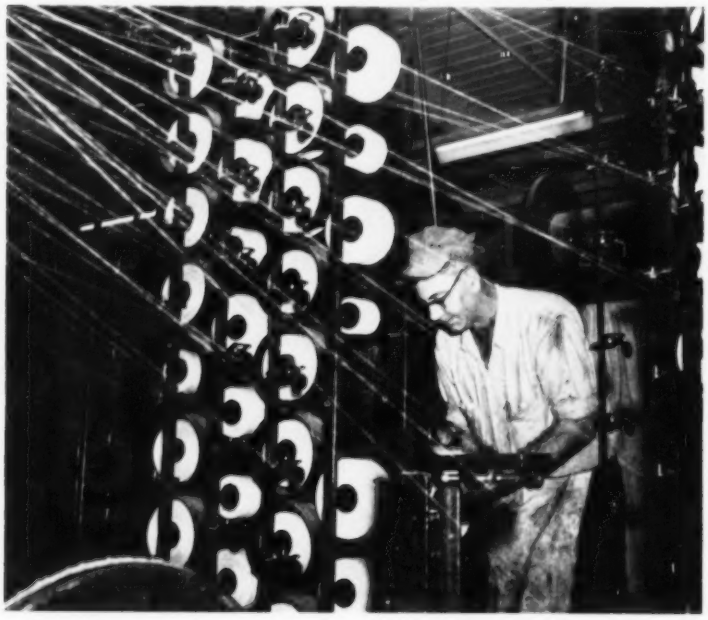


Location of Defect	Inches Per Repeat In Sliver	On Chart Inches per Repeat at these Ratios 36.61/1	14.64/1	73.20/1
Roll 1	20.277	.55	1.39	.28
Roll 2	10.166	.28	.69	.14
Roll 3	9.242	.25	.63	.13
Roll 4	3.960	.11	.27	.05
Calender roll	6.280	.17	.43	.09
30-tooth Gear Roll 3 — Same as Roll 3	9.242	.25	.63	.13
27- or 42-tooth gears between Rolls 3 and 4	8.318	.23	.57	.11
20-tooth gear on Roll 4	3.961	.11	.27	.05
21-tooth gear on Roll 2 — Same as Roll 2	10.166	.28	.69	.14
29- or 49-tooth gears between Rolls 1 and 2	21.784	.60	1.49	.30
27- or 61-tooth gears on Roll 1	20.282	.55	1.39	.28
84- or 50-tooth gears between Rolls 1 and 4	16.624	.45	1.14	.23
20-tooth gear on Roll 4 (from Roll 2)	3.958	.11	.27	.05
20-tooth gear on Roll 4 (from calender roll)	3.959	.11	.27	.05
29- or 46-tooth gears (between Roll 3 and calender roll)	9.106	.25	.62	.12
20-tooth gear on calender roll — Same as calender roll	6.280	.17	.43	.09

Selvage creel for spools, located behind section beam creel.



Selvages are drawn from creel arranged to take Barber-Colman cheeses; winder-type tension devices keep tension on yarns.



WARP SIZING

Article 10—Conclusion of discussion of the sizing process*

by Paul V. Seydel, D.Sc.
Seydel-Woolley & Co.
Exclusive

Washing Down of Slasher Blankets. At the end of a day's run, the size box should be emptied and the slasher blankets hosed thoroughly to clean off all the size, so that the size will not harden on them. The practice of washing down the blankets while running is bad, for it not only dilutes the size, but also the addition of cold water to the size will cause some gelling of starch sizes. In addition, the cooling off of the rolls will also cause uneven sizing.

However, if it becomes necessary to stop the slasher in the middle of a set for any length of time, the rolls must be washed, using as little water as possible, to prevent the size from setting in the blankets.

Handling of Selvages. Where the selvage yarns are of the same—or practically the same—weight as the yarns in the body of the warp, they require no special handling. Plied selvages are best run under the finishing roll alone, or they may be left unsized. If left unsized, heating of this comparatively dry yarn will produce no ill effects, since there is no size film which might be damaged, and the yarns will come to equilibrium with the other yarns after winding on the loom beam.

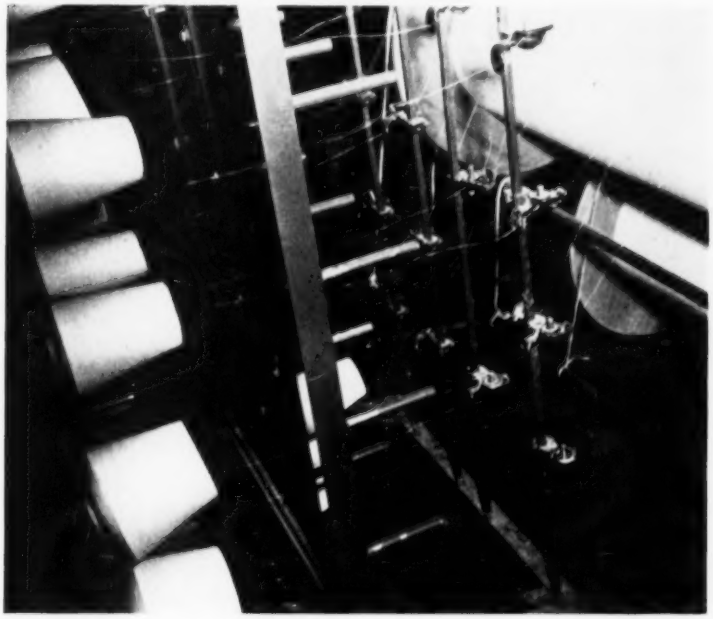
The selvage yarns may be run from bobbins or cheeses supported on bobbin creels at the back of the slasher, through porcelain eyes, to join the warp sheet after it passes through the squeeze rolls, as it reaches the drying cylinder.

Where selvage yarns are heavier than the other warp yarns, but not plied, and it is desired to partially size them, they may be most advantageously run from bobbins, through porcelain eyes hung from the hood over the size box, then through the finishing roll with the other yarns, or through both squeeze rolls if so desired.

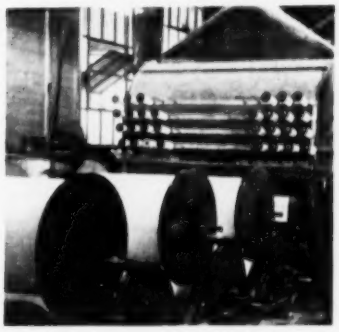
Selvage yarns that are wound on section beams are more difficult to handle separately from the other yarns, for the slackening and tightening of the main body of the warp as the immersion roll is moved up or down must be allowed for to prevent kinking or breaking of the selvages. This may be taken care of by running the selvage yarns through eyes fastened to a stick or rod hung trapeze-like from the hood of the size box with the wire hooks. Whenever

*Discussion of the sizing process began with Article 8 in the December, 1956, Issue. Article 1 of this series which deals with all phases of the warp sizing operation for cotton yarns and yarns produced from man-made fibers, appeared in the May, 1956, Issue.

Cones furnish the selvage yarn for this slasher. Winder disc tensions are satisfactory to reduce kinking or overrun.



Selvage creel for spools, located forward of section beam creel.



the slasher operator wishes to raise the immersion roll, he need only take this rod loose, and lower it with one hand while raising the immersion roll with the other, thus relieving the tension on the selvages.

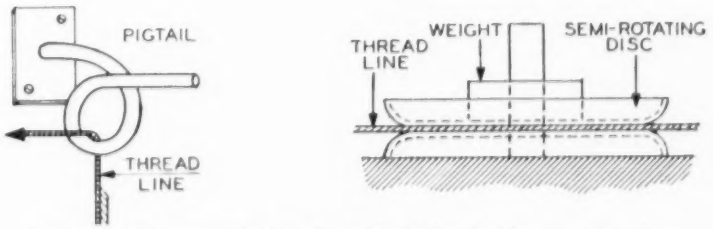
Occasionally a selvage will mildew, with the main body of the warp remaining unaffected. This is because the much heavier selvage yarns dry more slowly. Generally, any excess or lack of moisture in the selvage will equalize itself with the rest of the warp within a day or two, though in borderline humidity cases, where the warp has a high moisture content and the conditions for mildew are good, this may not be fast enough.

If trouble of this sort is experienced, it is preferable to cease sizing of the heavy selvages. Use of more heat to dry the selvages is a bad remedy, for more damage is caused to the main body of the warp by over-drying than can be balanced by the advantage obtained in having a sized selvage.

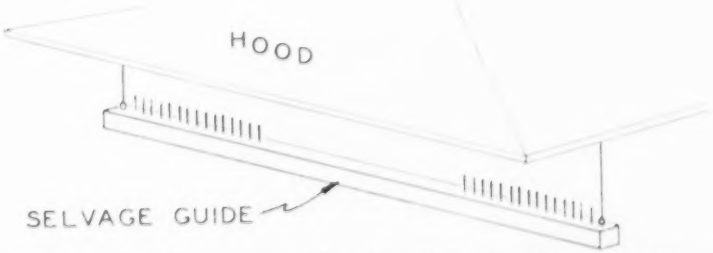
Where it is found necessary to size the selvages, and they will not dry properly when run through the body of the yarn, it is often found that they will dry better if led to the edge of the cylinder. Particularly in heavy sets, the larger selvage yarns may not lie with good contact on the drying can unless they are out to the side.

Some mills have solved the drying difficulty by running the selvage yarns twice around one of the drying cylinders, thus allowing more drying time.

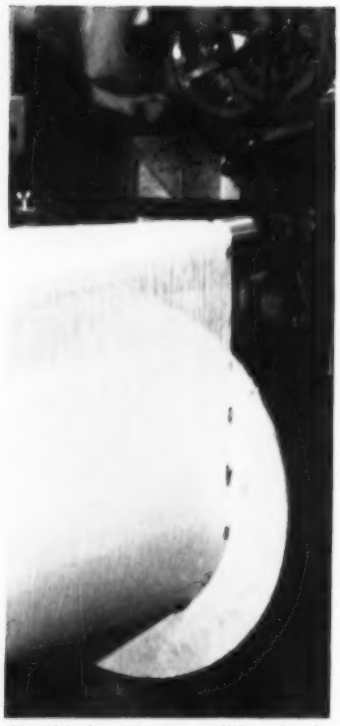
Slasher Run-Outs—Tension Devices (Beam Brakes). In order to prevent the kinking of yarns that will occur on slowing down the slasher if the section beams run free, some form of braking or tension device must be used. In its simplest form, this usually consists of a rope tied at one end to an eye bolted to the floor, with a weight fastened at the other end and slung over the back beam in such a



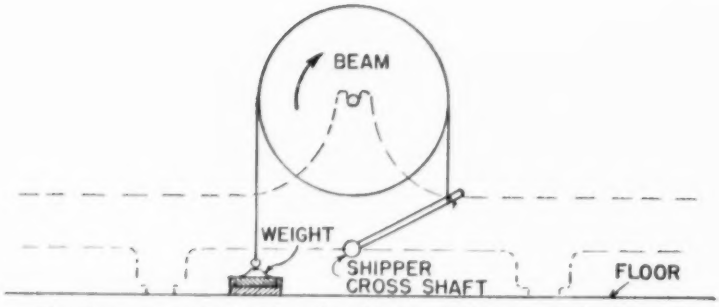
Two types of tension devices for maintaining tension on yarns from selvage creel.



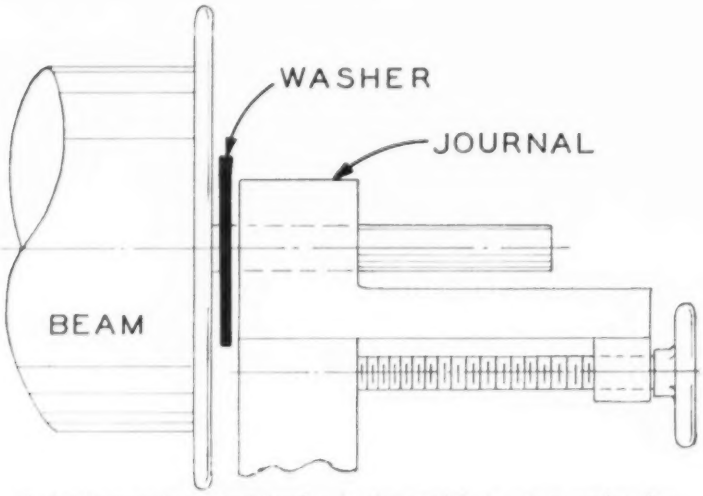
Selvage yarns that are wound directly on the section beams are more difficult to handle than those drawn from separate creels on spools, cones, or cheeses. However, if they are wound on the section beams, the device shown here for guiding selvage yarns may be moved to allow relaxation of tension when the immersion roll is raised.



Should the selvages mildew in the weave room, don't increase heat to dry selvages because remainder of warp may suffer; it is better to stop sizing the selvages entirely.



Showing one method of hanging friction weight on section beam in creel of slasher. During normal operation the beam runs free. When the slasher is slowed, the weight is lifted off the floor by the rope, which is fastened to an extension arm that is welded to the shipper cross shaft. The weight is so hung that if the rope should happen to snag, the weight will be picked up and thrown off, and the beam will not jam.



A simple way to control tension in the creel is to use a washer between the beam head and the journal.

manner that the friction of the beam tends to lift the weight. (See accompanying illustration.)

This friction device will keep a tension on the back beam, and if the yarns are run over and under the other beams, will serve to stop all the beams when the slasher is stopped. Care should be taken that the rope is not slung in the other direction, for then if the rope should get caught, all the pull will be on the floor, and either the rope or the yarns will have to give way.

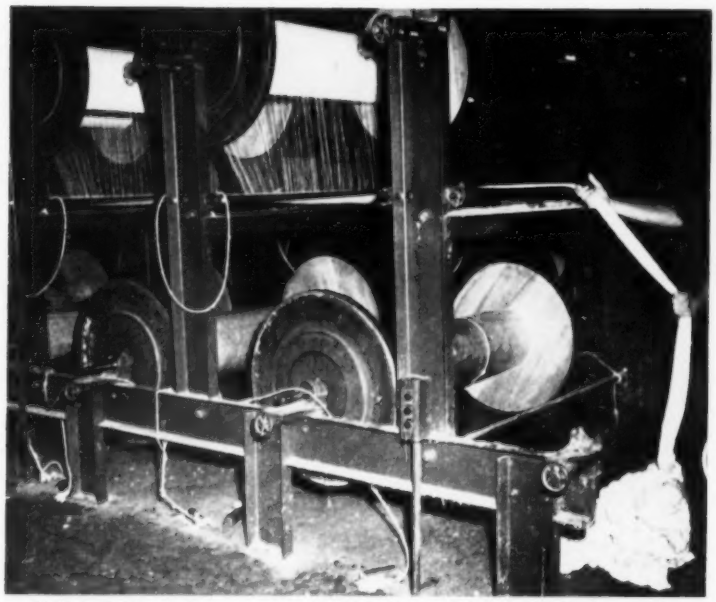
Instead of fastening the end of the rope to an eye-bolt in the floor, it may be fastened to the shipper bar, so that the weight rests on the floor during normal operations, and is lifted on slowing the slasher. Such a weighted rope may be hung over each of the section beams if desired. With over-and-under creeling it is not generally necessary.

There is often a tendency for the section beams to run out unevenly, leaving an excess of waste. This may be due to several causes. Where this waste is excessive, the warpers should be checked with a yardage counter to determine how much variation is occurring in each beam. Variation in tension on the section beams in the creel will contribute to the waste. Some mills have found that the back beam always runs out last, when the braking device is on the back beam, and have allowed for this by a slight decrease in the yardage on the back beam.

A simple way to guard against excessive tension on the section beams is to put large washers on the beam shafts, between the beam heads and the journals. After tightening the journals, these washers should be able to run fairly freely, otherwise the journals are too tight and should be loosened slightly.

Variation in waste is usually much greater where wet beams are run. Several other methods of controlling tension and braking the beams are described under the section on equipment.

Stretch, Tension, and Beam Density. In the case of drapery, most dobby weaves, all plain weaves, and other weaves presenting similar problems and loom settings, stretch should be as low as is consistent with smooth operation of the slasher (about 1¼ - 1½%). Beam density should be such that there is a slight give when pushing hard on the beam with the knuckle. This is especially true of poplins, broadcloth, wide sheeting, and other heavy-sley plain weaves. Sometimes, in order to obtain smooth breaking at the



If the section beams run out unevenly and cause excessive waste, check the yardage counter at the warper to determine the amount of variation among beams, and check the variation in tension on the several section beams in the creel.

lease rods with heavy sley sets, it may be necessary to increase the tension, and stretch in these cases may run as high as 2%.

Twills, drills, gabardines, sateens, and similar fabrics must be kept tight all the way on the slasher. Generally section beam tension should be greater than on other styles. Stretch from size box to delivery roll should be 2½%.

Beams should be packed with a very heavily weighted press roll, preferably one hydraulically or air operated. These beams should be wound under full tension.

For best results, direct current electric motor beam drives such as those that are part of a multi-motor drive system should be used whenever cloth appearance and hand are critical, such as with Type 4 twill and sateens. The recommended setting is at least 15 amps, preferably 20 amps if the motors will take this without overheating. The objective is to produce a uniformly packed, very hard, high density beam with practically no give.

This recommended procedure has been proved in practice by the better high quality mills. It is the generally accepted theory that the reasons for these recommendations in the case of drapery and similar dobby weaves are that the yarn must have as much residual elongation and elasticity as practical and the beam must have cushion to take care of differences in contraction from end to end, causing a tendency for tight and slack ends.

In the case of plain weaves where a large percentage of the warp stops are caused by knots and gouts, elasticity and cushion are needed so that yarn will give readily when repeatedly struck by an adjacent knot or gout.

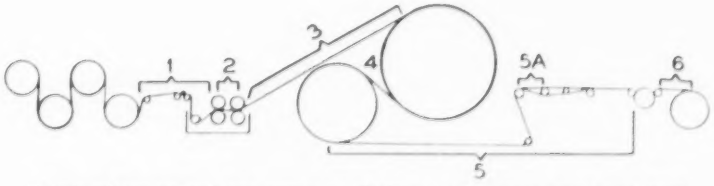
In the case of twills, sateens, gabardines, etc., the harness breaks up the shed so that cutting of adjacent ends by knots and gouts is greatly reduced. With reasonably good yarns, they should not be a major cause of loom stops. For this reason, loss of production due to additional yarn breakage on account of high tension and high density loom beams should be slight enough to be offset by the added amount of yarn that is packed on the loom beam with additional slasher tension and heavily weighted press rolls. This increase in yarn on the beam may amount to as much as 20%.

This manner of operation generally gives a decrease in the probability of stuck ends. The large reduction in "give" of the yarn as thick places, knots, or slubs hang momentarily in the reed will result in a smoother face, a more even twill line, and an appreciable reduction of knees in the cloth. Also set marks caused by yarn relaxing while the loom is stopped should be considerably diminished.

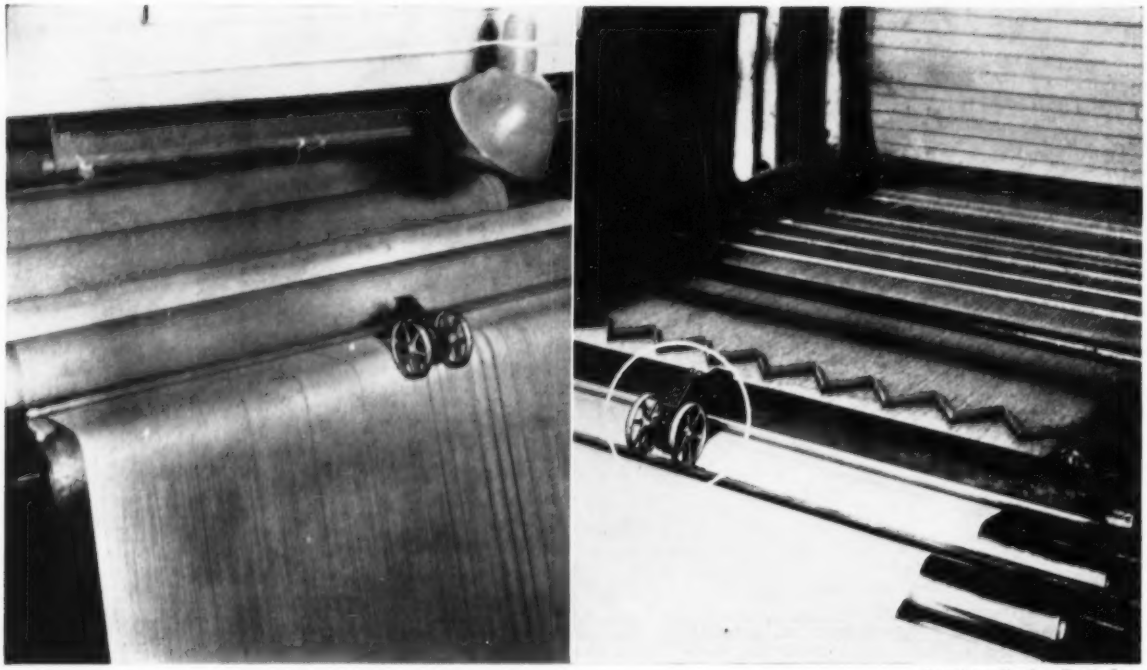
As these styles must be woven with a very tight bottom shed on the loom, it will also be easier to get proper and uniform settings on the loom with the tight beams. On very high sley warps slasher operation should improve with high tensions.

With rayon, synthetics, and blends the optimum stretch on the slasher depends on the characteristics of the particular yarn and the further treatment or end use of the woven cloth. The proper stretch must be worked out by the preparation overseer, who should keep these things in mind, and who must also keep his eye out for set marks, general appearance of the cloth, and slashing conditions.

A good starting point for stretch



Points where stretch can occur on slasher: (1) between creel and first squeeze roll; (2) between first squeeze roll and finishing roll; (3) between finishing roll and cylinders; (4) between cylinders (when bearings are tight); (5) from cylinder to drag roll; (5a) in front of "busting" rod on heavy sets where tension is needed to separate yarns; (6) between delivery roll and loom beam (although there is appreciable tension, measurement often shows a shrinkage rather than stretch).



Courtesy Veeder Root, Inc.

Yardage counters may be used on slashers for determining the amount of stretch that is placed in the yarn at this process. At left is shown a double-wheel yardage counter running on the yarn as it passes over the last roll before the yarn enters the size box; input yardage is obtained by this instrument. At right is view of double-wheel yardage counter at front of slasher, which gives delivered yardage. Usual procedure for calculation of stretch by this system is to reset both counters to zero and run the slasher until the counter on the delivery (loom beam) end of the machine reads 100 yards; the counter on the input (size box) end is read and the difference is the number of yards of stretch placed in the yarn. This can be readily expressed as per cent stretch.

on a new style of rayon or synthetic would be roughly 40% of the elongation of the yarn at break point, where this is over 10%; and 30% where it is under 10%. In other words, a yarn with 15% elongation may be stretched 6%; one with 7% elongation about 2%.

In the case of rayon warps, which inherently possess a greater extensibility than cotton, more stretch is usually applied—in some cases as much as 6%. Among other things that this extra stretch does is to minimize the set marks caused by the creep relaxation of the yarns during stoppage of the loom. If most of the extensibility is removed from the yarn, it does not have as much tendency to creep.

We normally find that a stretch of 3% is common with spun viscose singles, while plied yarns may be stretched 5%. The yarn count will not affect this to any great extent with spun yarns. In the case of filament yarns, more stretch is applied to the heavier deniers. For example, a 50-denier yarn may be stretched three or four per cent, a 100-denier 6%, and 200 or heavier up to 8%. Approximately the same amount of stretch is applied to acetate as to viscose yarns.

We should make the point here that these figures apply to the regular yarns, since the so-called high-tenacity yarns have only about half the extensibility of the regular yarns, and hence should be stretched only to about half their permissible amounts. The tensions will then be comparable.

Stretch should be checked from time to time by use of yardage counters installed on the front and back of the slasher.

The back counter may be mounted to roll on the yarn as it goes over the feed roll into the size box, and the front counter on the "calender roll," the roll to which the yarn goes just after passing the comb. The slasher should be stopped when the counters are set to zero, and again at the end of the run, to assure that they are both running for exactly the same period. For routine checks, measurement of one hundred yards will do, but at least one thousand yards should be measured for accurate calculations.

If excessive stretch is found, check the gearing of the slasher. With positively driven cylinders, improper gearing will show in having a very tight sheet of yarn between the size box and the cylinders.

Whether the yarn is slipping on the cylinders may be checked by marking the warp and cylinder together where the yarn comes on the cylinder, and noting if the marks are still together as the yarn comes off. If a change of one tooth in the gears would be too great a change, a ratchet drive can be used. When the yarn becomes too tight, the ratchet will slip and eliminate the tension.

The copper rolls in the size box must be practically the same size, with any difference in favor of a slightly larger first or back roll. If the finishing roll is larger than

the back roll, the yarn will be pulled away from the back roll, giving too much stretch. Some mills have found it advantageous to have the finishing roll 1/64 of an inch smaller than the back roll.

From time to time it will be necessary to turn down the surface of the bottom (copper or stainless steel) roll in order to keep a smooth even surface for squeezing. These rolls are made to a standard of 9 inches, and will stand turning down several times before any appreciable difference in diameter is obtained—if the machining is carefully done. However, the stretch obtained after each machining should be measured, for the relative circumference of the squeeze roll and the drag roll are thereby being changed, and it may be necessary to adjust by taking some cloth off the drag roll. When most of the cloth is off, it is then desirable to either replace the metal roll or build it up again to its original diameter.

If there is too much cloth on the drag roll, this will produce excessive tension all the way back to the squeeze rolls. Some of the stretch may be eliminated by taking cloth off the drag roll a layer at a time until the proper diameter is reached to give the stretch desired. There should be just enough drag so that the yarns will not slip on the drying cylinders, and so that it will split properly at the lease rods.

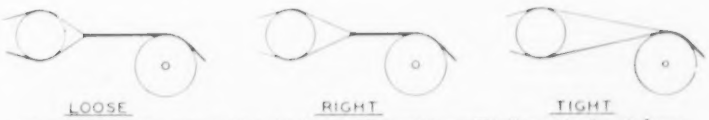
The amount of tension required for this will usually take care of one other purpose of maintaining tension—namely, to be able to keep the warp ends parallel and in proper alignment with each other.

The amount of tension required for splitting the yarns can be greatly decreased by using a split rod between the size box and the first drying cylinder. This rod should be fitted with a rope-driven pulley so that it may be continually turned to prevent size building up on it. The roller surface speed should be much slower than that of the yarn sheet to prevent lapping on the roller. Its direction of motion is not important.

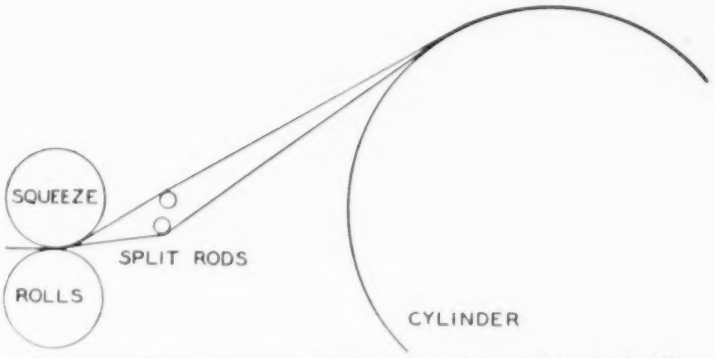
It may be of interest to note at this point that some operators running stripes use these wet split rods at the back of the slasher, as they claim it minimizes the tendency of colors to bleed off on whites. Evidently keeping the yarns separate for a short space allows the starch paste time to gel, thus minimizing any flow which might occur between yarns.

Another way of decreasing tension necessary to split the warp is to use larger diameter split rods.

Note that if warper tension is uneven, more tension is needed at the split rods to prevent slack ends from going around the wrong side of a lease rod and breaking out.



Tension on the warp should be sufficient to split the set about four or five inches behind the "busting" rod. If too loose, many ends will break on splitting. If too tight, there will be too much stretch of the warp.



Tension required for splitting yarns can be decreased by "wet-splitting," which results in a smoother yarn.

A slack end from a warper will often become gradually looser at the split and will continue to follow its neighboring yarns around the split rod until it becomes tangled and breaks out.

Cleanliness. Cleanliness is even more important in the slasher room than it is in other parts of the mill—if for no other reason than for the fact that dirt or fly falling onto the yarns will be glued to them by the size mixture.

Cleaning by air blast should be avoided in the slasher room. Sweeping should be very carefully done to prevent filling the air full of dirt that might settle on the yarns as they go into the size box, or that might fall into the size box itself, or into the kettles.

The slasher room must be sufficiently well ventilated, so that the steam driven off the drying warps will not condense on pipes and ceilings to drip back onto the warp with the dirt it collects. Overhead bearings should be watched to see that oil or grease does not drip onto the warp.

Between sets, any accumulation of dirt or lint on the hoods or elsewhere over the warp should be swept or wiped down. The size box must be cleaned out thoroughly at least once a day, but it will be even better if this is also cleaned out between sets.

A funnel containing a piece of fine screen should be suspended below the size inlet to screen out trash and size lumps. Such a strainer is easily cleaned and will

Between sets, any accumulation of lint on the hood should be swept or wiped off; if lint falls into the size box, trouble at the front of the slasher or in weaving will result.

help a lot in producing cleaner warps.

Size kettles, boxes, and lines should be thoroughly cleaned periodically. Whether the period is once a month or once a week depends to some extent on how well the operators keep the equipment clean during normal day-to-day operation. One of the best methods for a thorough cleaning is to boil out with sodium carbonate (soda ash).

Dissolve 10 - 15 pounds of soda ash per 100 gallons of water in the cooking kettles; bring this to a boil and boil for a while with the agitator running. Pump this solution through the size lines and into each kettle, boiling for a few minutes in each, then into the size box (do not boil this in contact with the squeeze roll blanket).

This treatment will remove all but the most stubborn deposits of hard size. With starch-based sizes, any unremoved size may be treated with a 1% enzyme solution. If this is made up, warmed to 150 F, and allowed to stand in contact with the size over the week end, what size has not dissolved may be easily washed out. Be careful not to overheat or boil the enzyme solution, as this will destroy its action.

Slashing Heavy Sets. In the slashing of warps with a large number of ends and with heavy yarns, additional difficulties are encountered both through difficulty in obtaining proper size penetration and from drying troubles.

Where possible with very heavy sets, the warp should be split, and half run through each of two size

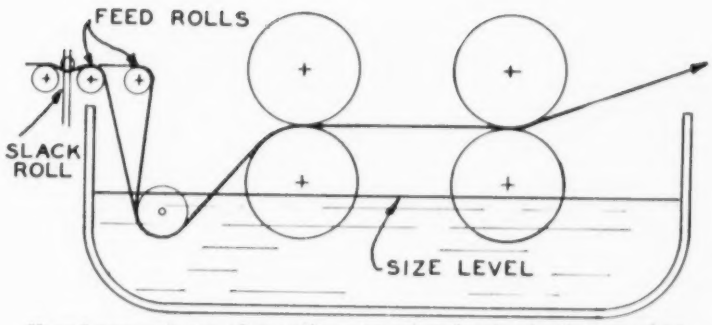
Cleaning by air blast in the slasher room should be avoided except when absolutely necessary. If done, the operative should be certain that lint and dirty matter blown off the stopped slasher do not get into warps running on adjacent slashers or warps in storage.

boxes. This will separate the yarns better, allowing the size to come more easily into contact with the yarns. Also, it will allow a better dressing off of the yarns when they are spread out a bit. There is less tendency to form a single solid sheet of yarn and size, with the yarns well glued together.

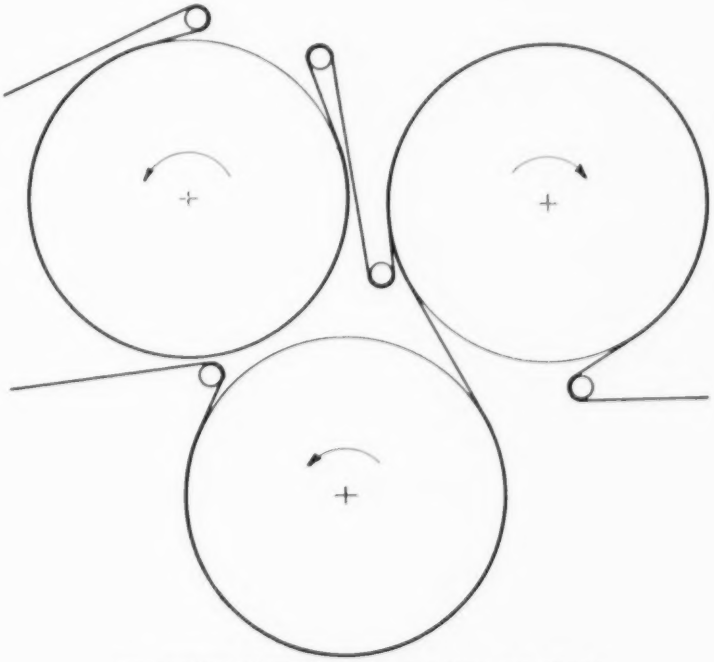
If two size boxes are not available, some improvement may be obtained by splitting the set before it goes into the size box. Two guide rolls are used, one in front of the other, and half the yarns go over each roll. The rolls are set so that the two halves of the warp sheet enter the box about an inch apart, and the immersion roll is run just a little deeper than usual, in order to allow time for the size to reach all sides of the yarns. This will give an improved sizing.

Most very heavy sets are run on slashers with more than two cylinders. In this case, better drying is obtained if half of the set is dried first on one cylinder and the other half on another cylinder before they are brought together on the third cylinder. This gives improved drying, and it is generally found that the amount of size on each half of the warp sheet is more nearly equal when this practice is carried out, rather than when the split warp has both halves put wet on one cylinder. In the latter case, there seems to be some robbing of size from the top half by the bottom half.

When such splitting is done, of course, the first two cylinders on which the halves are dried should be the same size.



Very heavy sets are often split on entering the size by the use of an extra feed roll. Each half of the sheet enters the size independently. Since the yarns are then not so crowded against each other, they have a better opportunity to be exposed all around to the size, and better size pick-up results.



One method of splitting sets on a three-can slasher.

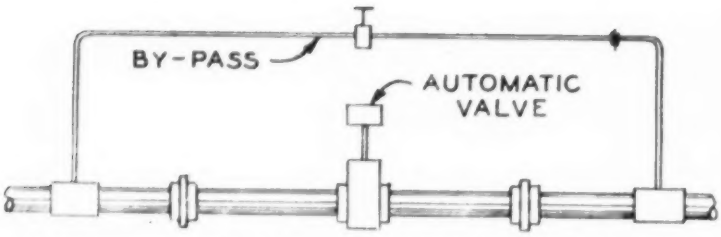
Slashing Light Sets. With very light sets, at the same slasher settings, more stretch may be encountered than with heavy sets. There are not as many yarns among which to distribute the tension load, which will mean more tension on each yarn. There is always some slippage through the nip at the squeeze roll, which is lubricated by the wet size, and this slippage is usually greater on heavy sets simply due to the multiplied tendency of the yarns to hold their original dimensions. In extreme cases, it may be necessary to take some cloth off the drag roll in order to bring the stretch down to reasonable amounts.

With very light sets, it is sometimes found difficult to dress the yarns properly. One way of getting around this is to slash double sets, using two loom beams at the head end, and two leasing sections. This will greatly increase the slasher's production, as well as give a better dressing of the size.

Where this is impractical, better dressing of the yarns is obtained by bringing them together in ribbons by means of the use of a serrated board placed just behind the size box, so that the yarns enter the box in several sheets, each having about the same number of ends per inch as a normal set.

Slashing Wet Warps. Slashing of wet warps requires the patience of Job when it comes to paying attention to detail. All of the normal slashing troubles are present, with several more added, causing this to be one of the most difficult of sizing problems.

Undoubtedly, the best solution is not to size wet warps when it is at all possible to avoid it. Where wet warps are continually run in a mill, this can be done without an additional operation by the installation of one or two drying



A small constant flow by-pass valve will decrease the intermittent effect of the off-on type of automatic valve, thus allowing more even flow of size into the box.

cylinders between the section beam creel and the size box, a comparatively small investment that will pay for itself in savings on headache tablets alone. The actual amount of drying obtained on this cylinder need not be nearly as accurate as that obtained on the other cylinders with the sized yarns. This yarn may be dried at a higher temperature than that used for the sized yarn, for there is no starch film to suffer damage from baking, and the yarns will be wet again immediately.

There are two big troubles ever present in sizing wet warps. First, they are so soaked with water that the size cannot penetrate sufficiently to get anchorage onto the fibers, which results in increased shedding and less size pick-up.

Secondly, the water present in the yarns mixes somewhat with the size as the size begins to penetrate, and is then squeezed out again into the size box by the action of the squeeze rolls. The result is a diluted size mixture, with greatly decreased efficiency.

Because of this dilution, circulating systems should never be used for sizing wet warps, for all of the size will become gradually diluted. A constant level device should be used to require as little watching as possible, and as little size as possible consistent with good slashing practice should be kept in the size box. In this way, the size in the box will be used up as rapidly as possible, and the effect of the dilution will be decreased.

With a properly operating constant level device, preferably one with a small constant flow by-pass to decrease the effect of intermittent additions, a fairly even size mixture can be kept in the box, and the formula of the original mix can be strengthened to allow for the dilution. After a short period at the beginning of the operation, the dilution will come to equilibrium with the size being added. Only in this way can uniform sizing be expected with wet warps.

If variation is still too great, allow a small stream of size to run continuously from the size box to the sewer. The extra material cost will be more than made up for in weave-room production.

Where wet and dry warps are run through the same slasher room, different size mixes should be used for the two.

More attention must be paid to having small and even tension on the section beams with wet warps, for they will stretch much more and are less elastic than the dry warps.

Particular attention should be paid to avoidance of over-drying warps sized from wet section beams, for as brought out, the penetration of the size to a good anchorage is prevented by the presence of the water. Therefore, an overdried or baked size film on this type of warp is much more likely to shed than with the ordinary warp.

Some mills sizing wet warps have a storage section where the wet beams are kept turning 24 hours a day by means of a small motor. In this way the water is kept from settling to one side and giving a badly unbalanced beam.

Warp Lubrication. Warp lubricators are auxiliary equipment designed to be used on a slasher for the purpose of applying additional lubricant to the surface of the size film after the size film has been applied to the yarn.

The use of the warp lubricator adds a small amount of labor in handling the machine and the materials and keeping the lubricator operating properly. The lubricant itself adds to the cost of materials used in the slashing process. This increased cost of operation and of materials makes necessary an appreciable improvement in weave room production from the point of view of increase in efficiency or decrease in seconds, or both. Whether the operation is justified in any particular mill will depend on that mill's conditions and the yarns and cloth it produces.

Under most circumstances, it has not proved sufficiently of value to be adopted for cotton slashing, where quite high weaving efficiencies are obtained, and only a small proportion of the loom stops may be corrected by slashing improvements. For rayon, it has found some use, and for synthetic yarns the practice of adding a surface lubricant is becoming wide-spread. Evidently the power of the lubricant to minimize static formation is one of its chief attributes. Improved abrasion resistance due to lubrication of the yarns also helps on heavy sets.

The lubricant should not be considered a substitute for the softeners, deliquescents, and film-forming agents present in the usual size compounds. In general, where it is used, the sizing formula is not modified, but the lubricant is applied on top of the size.

Of course, there are some uses for this type of lubricant in the case of very heavy yarns or plied yarns, where only a little improvement in the weaving characteristics of the yarns is needed. In this case, a lubricant may be applied to the raw yarns, without the use of any other size.

From one half to one per cent of lubricant is usually applied, based on the weight of the yarn. This has been found to be adequate for cotton and rayon, and in the case of some difficult synthetic constructions, has enabled weaving at reasonable production rates, where without the lubricant, the fuzzing and matting or tangling of yarn fibers was so bad that weaving

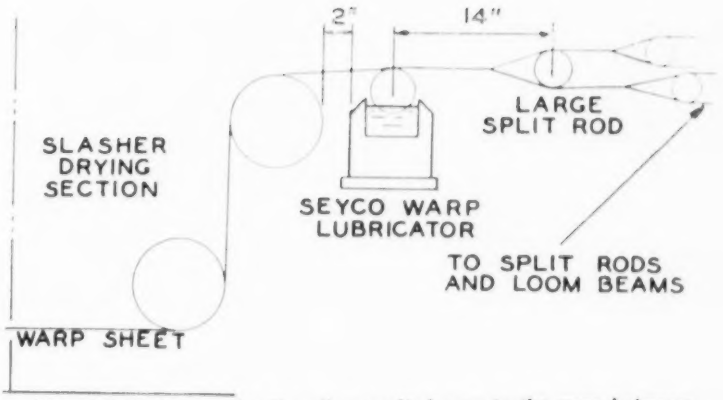
these constructions had not been considered economically feasible.

Excess of lubricant does more harm than good, as it will be rubbed off the yarn, and collect on the loom parts, interfering with the operation, and coming off in lumps on the goods. One disadvantage found with this operation, is that the lubricant tends to pick up dirt, so that the cloth is not as clean. This is not serious in most cases, for the dirt, being on the outside of the size, is readily removed in finishing operations.

Although the roll applies the lubricant on one side of the yarns only, this does not prevent it from working effectively, as the rest of the yarn surface picks up lubricant on contacts, both when wound on the loom beam, and during the weaving operation.

The operation is very simple. The only things to watch are the maintenance of a constant level of lubricant in the trough, and in the case of melted waxes, the maintenance of a fairly constant temperature. The equipment should, of course, be kept clean.

Control of pick-up is determined by the rate of speed of the roll in the trough. The rolls generally turn in about the ratio of one inch of roll travel to one hundred inches of yarn travel. This ratio will vary with the viscosity of the material being picked up by the roll, and with the weight of the sets being slashed. A more viscous material, which does not flow off the roll rapidly, will require a slower turning roll. As all of the lubricant is wiped off the roll by the yarns, a heavy warp will require that the roll turn proportionately faster, in order that these yarns will pick up the same percentage weight of lubricant.



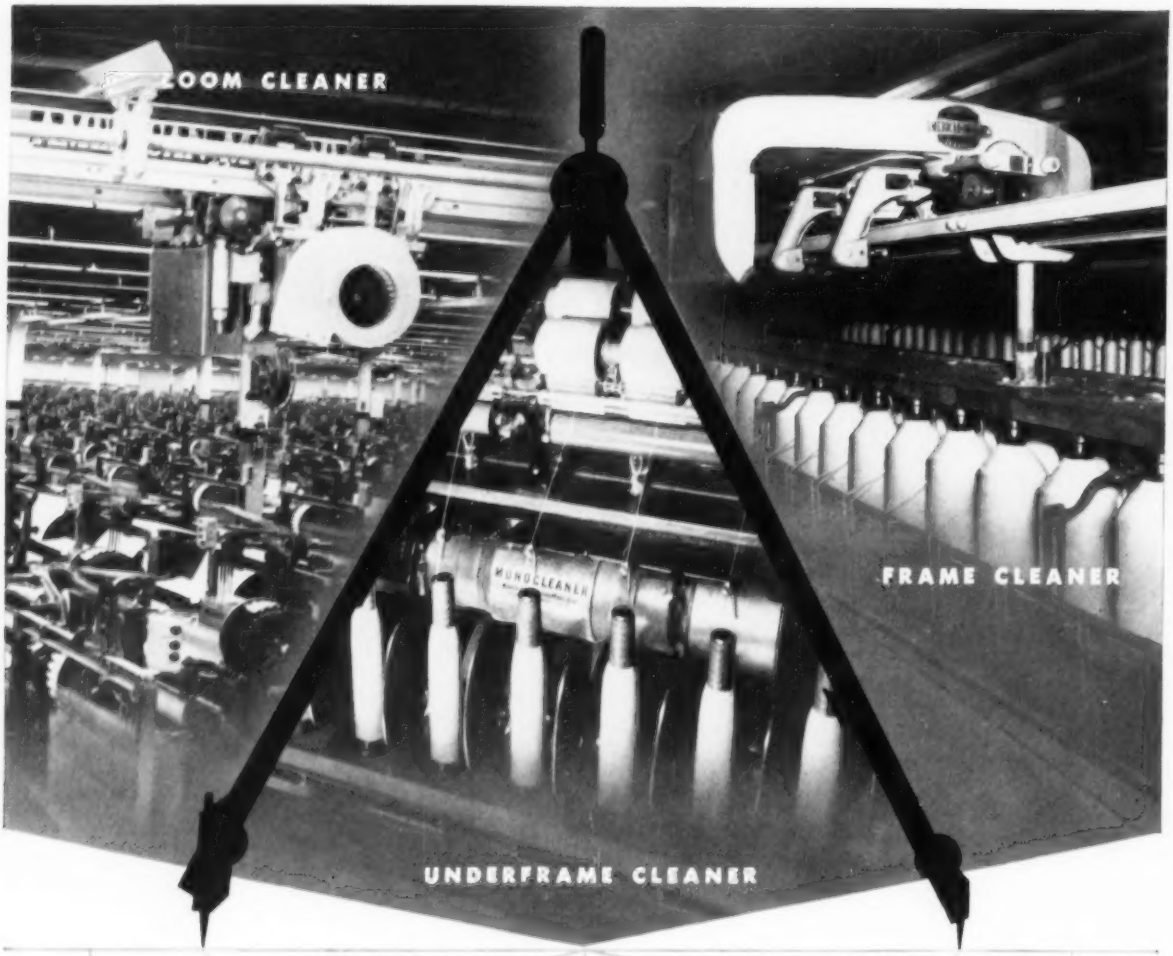
Warp lubricator applies the oil or melted wax to the yarn between the drying section and the split rods.

Viscosity Testing. It is quite often desirable to test the viscosity of size mixtures in actual use. This is often done to check on dilution of size by wet warps, wet steam, leaky valves, etc.; or to test the action of storage or agitation on the size. The size mixtures generally in use are too thick to be tested by the capillary tubes or small orifices ordinarily used for viscosity testing, and the special types of apparatus designed for testing of heavy starch pastes in the laboratory are not only very expensive, but also are not suited to testing the material as it is in use. A method by which size is dipped out of the kettle or box and the time measured for it to run through an orifice has the disadvantage that the temperature cannot be kept constant.

A continuous viscosity meter is described in the chapter on slasher controls [in a subsequent issue].

For occasional checks, a very simple device is the "Zahn Cup," a gadget developed for testing of

The Zahn cup being used to measure fluidity of a viscous liquid.
Courtesy General Electric Co.



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paint and varnish viscosities. This is a small stainless steel cup with a long wire handle and a small hole in the bottom of the cup. By means of the wire handle, the cup is lowered into the size, held long enough to allow it to become as hot as the size, and then lifted out. Timing is started as soon as it is lifted out, and the time measured is that required for the cup to drain to the point where the stream flowing out of the hole breaks.

This will give an arbitrary standard in seconds which may be used to check uniformity of the size. (Although this may be converted to centipoises, the conversion is inaccurate, and of no particular value to the practical mill man.) The Zahn Cup comes in five different sizes—all the same size cup, but with different sized holes for checking different viscosity ranges.

A more accurate and more sensitive method is the check by the Brookfield viscometer. It is also more expensive, and the instrument itself is delicate and must be carefully handled. This viscometer has a synchronous electric motor, to the shaft of which may be attached specially designed spindles. These spindles, in the shape of various size discs or cups, are turned in the size mixture, driven by the synchronous motor.

The drive is not direct, but through a spring to the shaft holding the spindle. When there is no resistance to the turning of the spindle, the spring holds the shaft in such a position that a pointer on the other end of the shaft indicates zero on a graduated scale which revolves with the motor. Any resistance to the turning of the spindle, such as that exerted by a viscous fluid in which the spindle is turning, will hold back the shaft until the spring is stretched enough to balance the resistance of the viscous fluid.

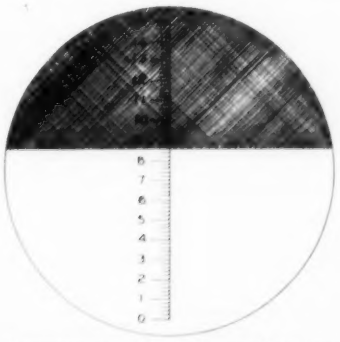
The scale reading obtained may be converted to centipoises by use of a factor corresponding to the particular spindle used. Such a machine is as accurate and as sensitive to viscosity changes as could be desired for mill use, and is actually in use for much laboratory research work. The Zahn Cup, though not as sensitive or as accurate, is, however, probably accurate enough for all but the most exacting work.

Courtesy Brookfield Engineering Labs.

The Brookfield viscometer may be used for testing size viscosity.

It will be noted by anyone who makes a practice of checking viscosities that the reading varies quite widely with small changes in temperatures, when running starch solutions or starch gums. This is not due to temperature dependency of the instruments, but actually due to the viscosity variations obtained when temperature is varied. Many practical men are very much surprised when they first note what a large difference in viscosity is obtained—and then understand why the experienced slasher man is always so particular about maintaining proper and uniform temperatures.

The Refractometer. One possible source of variation in viscosity might be an actual variation in concentration of the size bath, either due to faulty preparation, or due to evaporation of moisture from or addition of condensate to the size. Checking of size concentration is fortunately a very simple process for starch sizes, by the use of a refractometer.



Appearance of scale reading on refractometer designed for direct reading of per cent concentration of starches or sugars in a solution. Sample contains 8.6% starch.

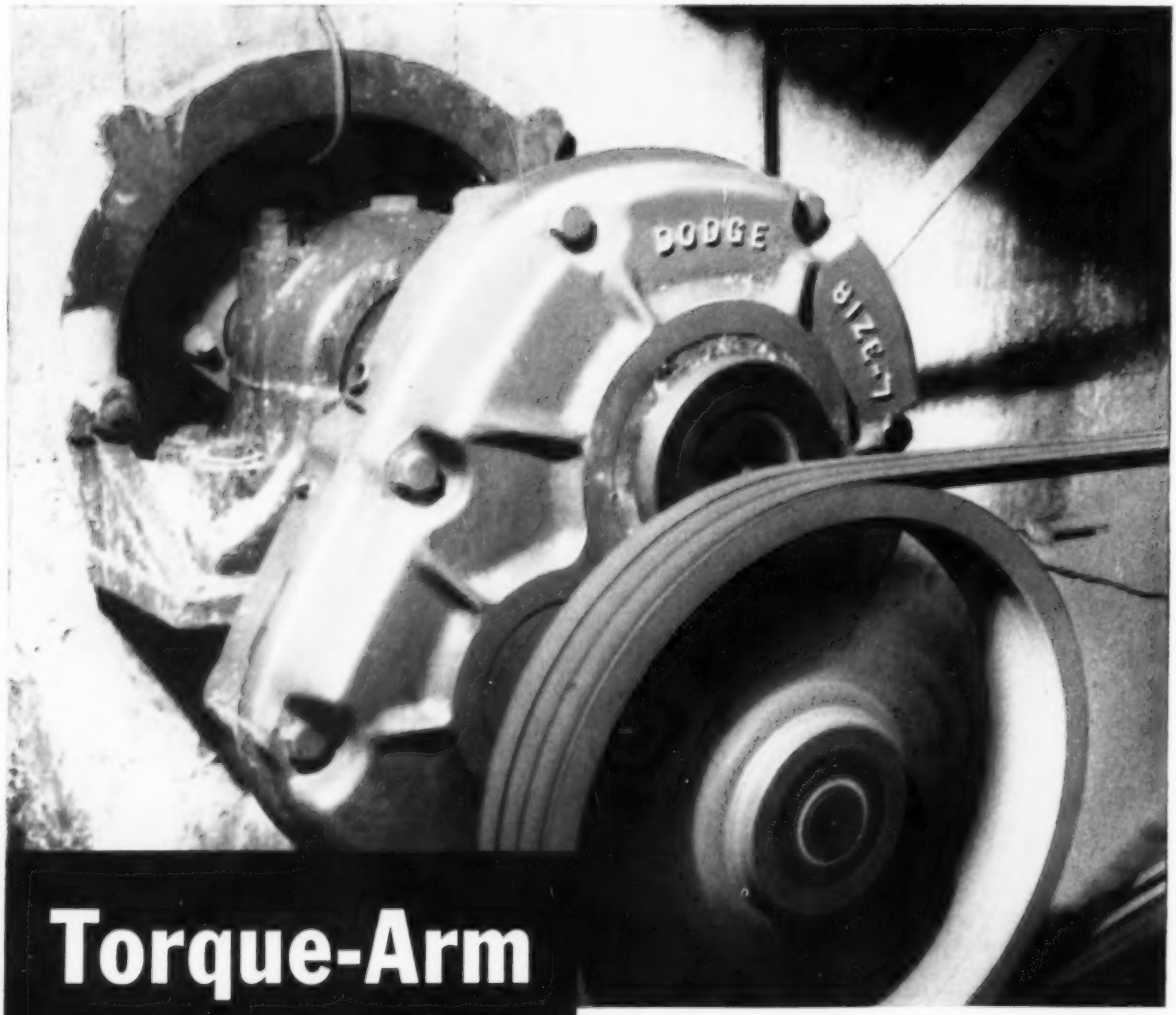
In this instrument, a small amount of size is placed between two carefully ground glass prisms. Light passing through the prisms and the layer of size is bent (you are familiar with this phenomenon if you ever noticed the way a stick put into water seems to be bent at the surface). The amount of bending of the light is proportional to the concentration of starch in the solution. The light beam also passes by an opaque shield and through a graduated scale. The amount of bending of the light ray varies the apparent displacement of the shield so that part of the graduated scale is light and part dark. At the edge of the shadow, the scale may be read.

Specially designed pocket refractometers are made with the scale calibrated to read directly in percentage of starch or sugar (as these two products affect light similarly). It should be noted that the lower concentrations of starch (10% or less) are fairly easy to check, while higher concentrations may often cause difficulties, probably due to the tendency of the starch to gel and change its fluid structure on cooling.

The readings should be taken when possible after a brief period has elapsed, so that the size has had a chance to cool somewhat to the temperature of the instrument, although such a wait at the high concentrations may result in a vague line difficult to read. In any event, if the instrument is used the same way each time, comparative results are obtained, even though under some conditions they may not be accurate to a tenth of a percentage.

The use of either a refractometer or a viscometer, or both, is highly recommended to mills that are slashing wet beam-dyed warps, in order that the mill can maintain an accurate control over the concentration of the size in the size box, and replace it when it has been diluted too far by the water from the wet warps.

(Continued next issue)



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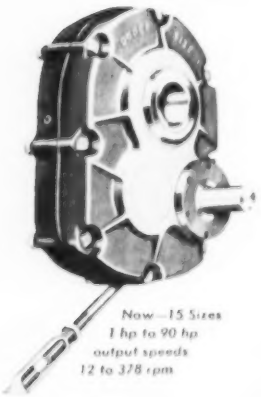

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Controlling and reworking cotton waste

by Marcus Gross
Exclusive

CLASSIFYING reworkable waste is entirely an individual mill problem, depending on the many factors that enter into a mill's production and quality requirements. The careful reuse of waste produced from picking through spinning can materially reduce cost factors.

Where high quality must be maintained, reworkable waste cannot be distributed indiscriminately into the stock in the opening and picking processes. To do so invites sharp reductions in the break factor.

The following discussion is based on the experience of a large cotton mill at which reworkable waste is evenly distributed and reprocessed on a percentage basis.

Weekly records are kept on baled and reworked stock. From these records an average is obtained.

THE FIVE one-process pickers are fed from two lines from the opening room. Two different staples can be processed simultaneously—three pickers on one line, two on the other.

A controlled hopper feed for reworkable waste can also be operated simultaneously for both staples. A short conveyor from the hopper to the main distributing conveyor carries the reworkable waste directly to the back of the pickers, by-passing the opening machinery, vertical opener and No. 12 opener.

CLASSIFIED reworkable waste includes all picker lap waste, broken sliver waste at the cards, comber lap and sliver waste, drawing sliver and roving waste. From the spinning room, roving and top roll lap waste are reworked. Waste cans at the head of each spinning frame are chalk-marked with the staple in process and, as each can contains three compartments for roving and roll-lap waste (combined), clearer, and scavenger waste, spinners are carefully instructed not to mix any of the waste.

At pickup time the waste is inspected before being sent either to the waste house or picker room. All roving and top roll lap waste is first run through a waste picker before being delivered to the waste feed at the pickers, and all such waste is classified as "roving waste" for percentage bracketing.

At one period scavenger waste laps were processed, but this was abandoned when the quality became affected. The spinner, in removing the lap, would also clean off the entire stick in the same motion, and the collected short fibers, blended with the scavenger lap, soon proved that this particular waste stock was inferior.

CONTROL must be exercised in handling the waste according to staple. All cabs, boxes, and bags are clearly marked before they are sent to the picker room. Here they are carefully sorted, weighed, and prepared for the waste hopper.

All weights are recorded at the picker and a weekly summary is sent to a control center working in conjunction with the Quality Control Laboratory. As an example of this control, Table I indicates how the percentages of reworkable waste are held close to or under the accepted standard. The standard can be changed periodically, if necessary.

The standard is achieved, with 10% added to allow for flexibility, by grouping a series of 10-week averages for any given period: usually 6 months; yearly if necessary. Weekly averages are added to the 10-week averages and the top weekly average in the 10-week averages is dropped off each succeeding week. An all-out effort is made to keep the weekly averages below standard. Any fluctuation indicating high waste factors, is immediately checked and corrected.

Keeping the waste factor low is doubly important in relation to costs, which the average employee will not know unless he is told and shown, and re-instructed if necessary. This holds true for both re-

TABLE I
Cotton Waste Classification

Source	Standard (%)	Week Ending 10 Weeks (%)	Week Ending 1 Week (%)
Lap Waste (picking)	1.79	1.35	1.16
Lap Waste (carding)	1.56	1.32	1.21
Drawing*	.50	.42	.43
Roving	.40	.43	.42
Combing, Lap & Sliver	4.53	2.83	3.30
TOTAL	8.78	6.35	6.52

*All sliver waste, other than combing, listed under "drawing."

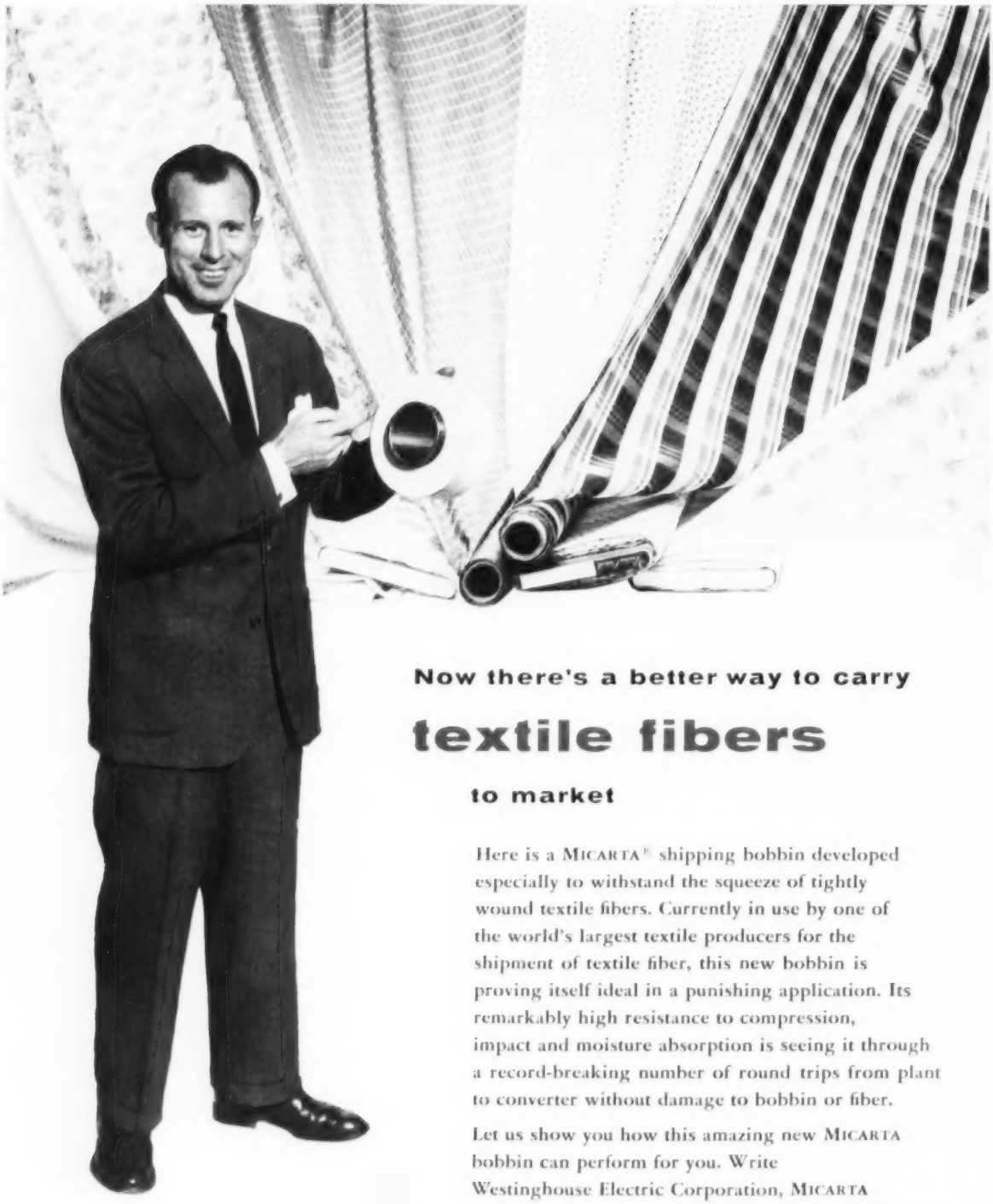

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TABLE II

Weekly Average Break Factors

Yarn	T.M.	Stock Inches	Avg. Size	Break Factor
33	3.50	1-1/16 C	32.3	2221
38	3.50	1-1/16 C	36.7	2176
13	3.75	1 K	12.5	2271
18	4.00	1 K	(18.0)	2183*
18	4.00	1 K	(17.8)	2191*
60	4.50	1-1/8 C	57.3	2090
16	4.75	1 K	15.7	2193
28	4.75	1-1/8 K	27.6	2207
30	4.75	1-1/16 C	29.2	2393

K = Carded. C = Combed.

*Both Saco-Lowell and Whitin frames.

workable and baled waste. Too often the employee will look upon reworkable waste as not being wasted at all. After all, it is re-run.

However desirable it may be to process the reworkable waste into cloth, it should be pointed out to all employees that there is a higher production and labor cost involved and these factors should be constantly kept at a minimum. A good axiom to remember is, "If it goes into cloth, it is not waste."

In comparison with recognized break factor standards, the break factors in this mill are relatively high, as Table II, taken at random from a weekly average break factor report, reveals. Formerly, without the rigid control of reworkable waste at the pickers, the break factors would periodically dip sharply.

Admittedly, break factors are not the sole yardstick to determine if waste (classified) can be reused. Cloth appearance, cloth breaks and board tests, plus general running conditions, should be carefully checked. In general, however the break factors will usually indicate whether classified waste can or cannot be successfully re-run.

NOT ALL REWORKABLE waste is fed directly into the production line from the controlled hopper feed. Discarded off-weight laps, and in some instances part laps that have been thrown out, are fed directly in back of the picker, all under control.

In relation to re-working reworkable waste, all avenues of waste should be constantly checked and supervised. Too often good stock is lost into the baled waste factor, or waste is produced that should not have been waste at all.

In combed mills, where the waste percentages may run as high as one-third of the total production a "few percentage points" on the high side, if allowed to continue for some time without correction, can mean a serious deficit as long as this condition exists. The major individual waste producer in a combing mill is the comber, and the comber process should receive major attention in relation to noil waste.

If noil waste, for example, is set at 12% and runs for any length of time at 14% or 15%, then waste is produced that cannot be reclaimed and which definitely should have gone into cloth. Noil percentages should be checked daily, or at the least two or three times weekly.

Aside from direct calculations of noil percentages which are determined from weekly production figures as against the noil removed, a more direct and quicker method (one used in this mill and also recommended by a leading textile school) can be used that accurately determines the noil percentage with little loss of time:

"Break the combed sliver under the tube gear of the coiler, at doff if preferred, and collect all noil and remove it. Run the comb approximately a minute, stop it, and break the sliver again under the tube gear of the coiler. Weigh it. Remove the new noil waste and also weigh it. Add both weights together to determine weight fed. Divide the weight of the noil by the weight fed for noil percentage."

Reducing costs through savings on waste and re-working classified waste looms more important today than ever before. It is no idle thought that "waste can make or break" where profits are concerned.

Use safe materials for floor conditioning

■ It is imperative to management, both from the standpoint of protection and preservation of their floors and also from the personnel standpoint, that a great deal of study and emphasis be placed on keeping industrial floors in good condition through the use of safe cleaning and preservative materials and a well-planned floor maintenance schedule, Harvey M. Scherr of Amerotron Corp. stated in a recent issue of "Safety News Letter" published by the National Safety Council's Textile Section. Here are some specific recommendations made by Mr. Scherr:

Select cleaners, seals, waxes, and other floor preservatives so that the final finish has a definite degree of friction or anti-slip qualities, whereby accidents due to slippery conditions can be prevented.

Flammable materials, such as gasoline, naphtha, and similar other cleaning compounds should not be used. In many cases, the use of these flammable compounds with an electric scrubbing machine or even with a mop near machinery that is electrically wired under the floor can offer a hazard of explosion or fire. Vapors from certain cleaning compounds can have a toxic effect on personnel.

MAKESHIFT CONTAINERS RESULTED IN COSTLY DAMAGE at Barringer Knitting Mills, Philadelphia. Orlon sweaters went from mill to dye plant in paperboard cartons, which lasted only a few trips and often broke in transit. Result: pulled threads, smears of dirt, and the extra expense of dry cleaning or classifying items as "irregulars." Carton replacement was costly.

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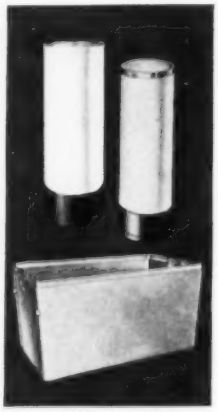

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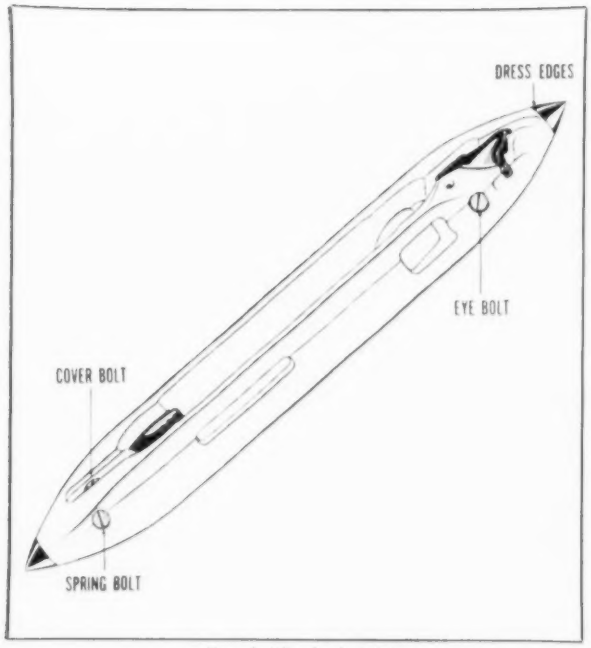
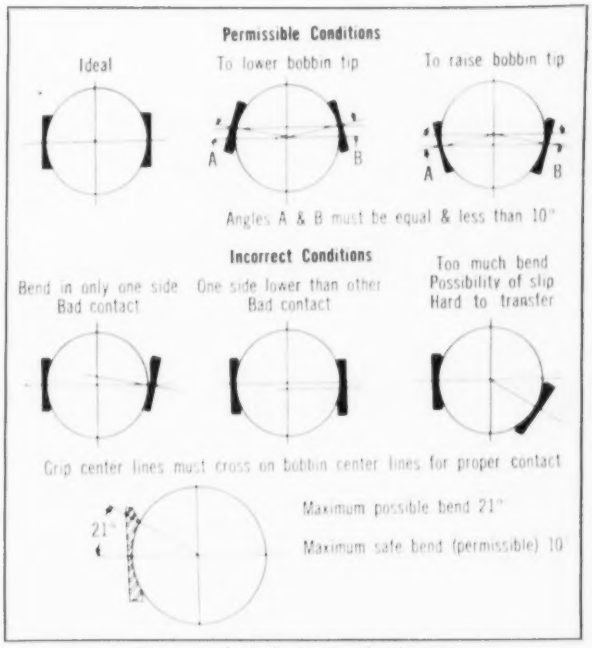


Key shuttle check points.



Proper method of aligning shuttle spring.

How to get longer life from shuttles

HERE are Draper Corp.'s recommendations for securing maximum shuttle life by using a planned shuttle-maintenance program.

1. Shuttles cannot be checked too frequently for loose hardware.

2. Smooth shuttle with fine sandpaper, apply a good shuttle dressing, and polish briskly.

3. Check shuttle fur, bristles, and thread groove.

4. See that bobbins are held straight in the shuttle. If work is required on the spring, *remove spring from shuttle first.* Never hammer in the shuttle spring leaves while the spring is assembled in the shuttle. Use shuttle wrench only for bending spring.

5. Check to make sure that shuttle screws or nuts are not cutting reeds.

6. Check back wall of shuttle. Keep back wall and bottom of shuttle square.

7. Keep feeler and thread cutter slots smooth.

8. Have tension pads centrally located for even tension on yarns.

Quality of loom fixing governs shuttle life to a great degree. Correct loom settings, obtained by using proper gauges, should be maintained.

Lay settings should be checked with long straight-edge and gauges for levelness, alignment, and correct height. For longer shuttle life, bottom shed should be no more than $\frac{1}{8}$" off race plate with lay at back-center position. Check also for bowed or warped lays and bowed harness frames.

Lay ends must not be loose, and top surface must line with top surface of race plate on the lay.

Reeds should be squared using a long straightedge and reed square. Check for loose or bowed reeds and rough or uneven dents.

Back box plates should be aligned with each other and with the reed, using the long straightedge and observing recommended settings. See that leathers are in good condition on all box plates and binders.

Front box plates should be checked with the reed square. They should be set square with top of lay end and adjusted at picker end so that shuttle tip is central with picker stick slot in lay ends.

Pickers, if worn, should be replaced when putting in a new shuttle. Pickers should be properly centered with the shuttle tip.

Power settings on the pick motion should be at a minimum to reduce shuttle wear.

Bobbin transfer must be checked to be sure that bobbins are ringing up properly.

Crank arms should be checked using lay gauge to assure that incoming bobbin butt does not strike front or back wall of shuttle.

The latch finger should be adjusted for recommended transferrer clearance over bobbin butt at front center position of lay.

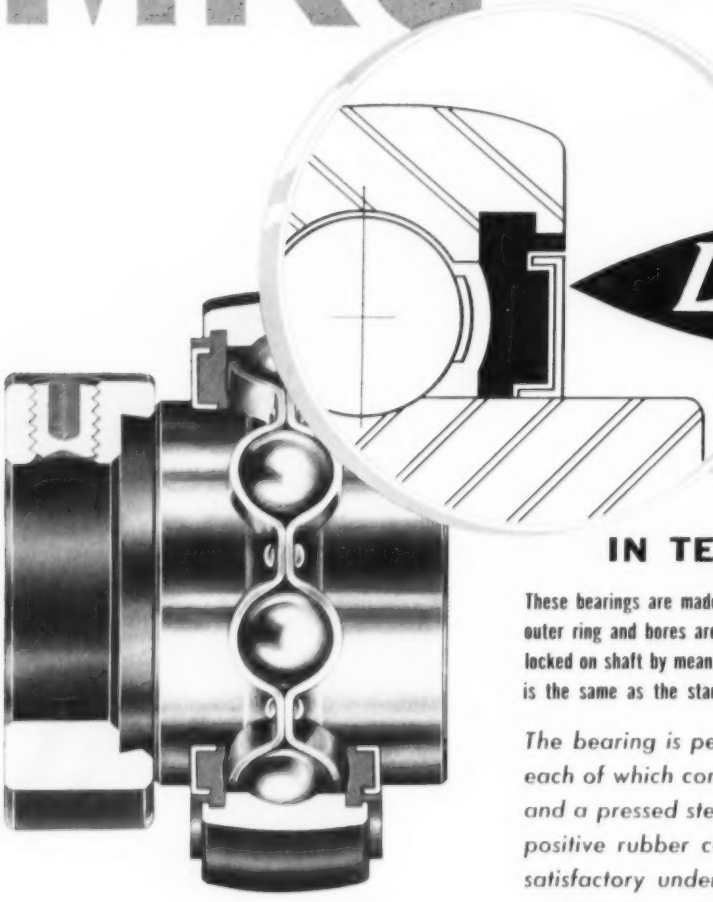
The shuttle feeler must be set to gauge.

Thread cutters should be set high in thread cutter holes, rather than low, to prevent damage to shuttles.

MRC POWER TRANSMISSION BALL BEARINGS

with

Labri-Seal



IN TEXTILE MACHINERY

These bearings are made with either cylindrical or spherical outside diameter of outer ring and bores are ground to fit commercial inch shafting. The bearing is locked on shaft by means of an eccentric locking collar. The internal construction is the same as the standard single-row deep-groove type.

The bearing is permanently sealed by M-R-C "Labri-Seals" each of which consist of two parts—a molded rubber disc and a pressed steel flinger. This combination labyrinth and positive rubber contact seal has been proven completely satisfactory under very difficult operating conditions. The seal provides maximum protection against the entrance of foreign matter into the bearing and at the same time retains the bearing lubricant, insuring long bearing life and avoiding contamination of materials being processed.

M-R-C Power Transmission Bearings with Labri-Seals are used in the Textile Industry for cylinder bearings in spinning frames; in beam stands on beamers; in roll supports on slashers; in crank shafts, cam shafts, beam stands on looms; as well as in garnet machines and cards.

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Ten years of cotton textiles–1946-1956

■ THE MARGIN of potential overproduction in the cotton textile industry is vanishing as a consequence of record hours of operation of existing reduced spindleage, and is clearing the way for balance in the forces of supply and demand, W. Ray Bell, president of The Association of Cotton Textile Merchants of New York, stated recently.

Writing in the 25th annual publication of the Association's annual "Ten Years of Cotton Textiles" survey and statistical chart (reproduced here), Mr. Bell noted that in 30 years hours operated per active spindle had doubled from 3,000 hours a year to a record 6,113 hours in 1955, exceeding the wartime top. Total hours run in 1955 were 126,338 million, exceeded only in 1942 when the nation had 4 million more spindles than now. Conditions locally and in various industry areas may render more intensive operation unfeasible, he said. At the same time spindleage has been dropping, with 1,709,000 liquidated in the decade, and 531,000 more lost in the first nine months of 1956. Currently total active cotton consuming spindles number only 18,780,000, little more than half the number of 30 years ago.

At some point in the near future, Mr. Bell said, the lines of spindle mortality and more intensive operation must cross. The period of stability or "even saturation" may be near, and a "renaissance of the cotton textile industry within two years time based on elimination of over-capacity and a tighter line between the forces of supply and demand" has been predicted by textile analysts.

The report showed a 4 per cent increase in square yard production of cotton goods in 1955 from 1954, with a likelihood that 1956 will show an outturn of goods equal to 1955 despite the price decline which extended from February to September, 1956. It revealed a constant rate of per capita cotton consumption at approximately 65 yards. With the rise in population this should mean public requirements this year for some 10,920 million square yards. Actual production for 1955 was placed by the Association at 11,319,347,000 square yards and the available yardage after import-export adjustment at 10,910,100,000.

Contrasted with the more optimistic potentials of the market, Mr. Bell cited "the growing threat of competition of imports of textiles and apparel" made chiefly in Japan with "unbelievably cheap labor" plus the "substantial benefits of sharply reduced tariff rates" in late 1955 and the new 1956 U. S. Government policy of selling cotton to foreign purchasers at "20 to 25 per cent below the price American mills are forced to pay." The absence of a compensating tax or other protection in the Government's cotton policy he called "a neglected scandal."

	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956
EQUIPMENT											
COTTON SYSTEM SPINDLES											
Spindles in place at beginning of year	23,787,000	23,928,000	23,727,000	23,751,000	23,342,000	23,113,000	23,178,000	23,131,000	22,940,000	22,764,000	22,579,000
Increase or decrease from preceding year	+681,058	+141,000	−201,000	+24,000	−409,000	−279,000	+63,000	−47,000	−191,000	−376,000	−345,000
New installations, additions and replacements	323,056	416,535	607,358	858,623	649,780	771,065	295,642	267,328	219,282	321,920	
OPERATION											
CONSUMING COTTON ONLY											
Average number of spindles active on last working day of month	21,475,000	21,588,000	21,391,000	20,963,000	20,456,000	20,662,000	19,944,000	21,023,000	19,991,000	19,126,000	
CONSUMING FIBERS OTHER THAN COTTON OR BLENDS											
Average number of spindles active on last working day of month	1,172,000	1,198,000	1,337,000	1,374,000	1,295,000	1,261,000	1,337,000	1,323,000	1,327,000	1,541,000	
ALL COTTON SYSTEM OPERATION											
Average number of spindles idle on last working day of month	1,212,000	1,066,000	1,051,000	2,334,000	1,372,000	1,264,000	1,887,000	1,572,000	2,015,000	1,828,000	
Spindle hours run											
On 100% ration	99,434,292,000	116,040,000,000	113,846,000,000	91,874,000,000	117,751,000,000	118,151,000,000	104,906,000,000	118,647,000,000	108,930,000,000	116,725,000,000	
On other Short Blends	5,873,000,000	6,346,000,000	7,412,000,000	5,816,000,000	7,502,000,000	7,563,000,000	7,583,000,000	7,487,000,000	7,560,000,000	9,613,000,000	
Hours run per average active spindle	5,094	5,571	5,424	4,682	5,760	5,735	5,524	5,599	5,633	6,113	
MARKET											
COTTON TEXTILES											
Production in square yards	10,171,225,000	11,083,383,000	10,863,129,000	9,161,578,000	11,206,659,000	11,415,218,000	10,593,006,000	11,332,562,000	10,892,456,000	11,319,347,000	
Exports in square yards	774,945,000	1,480,025,000	938,796,000	880,255,000	558,678,000	802,427,000	761,395,000	621,065,000	605,047,000	542,389,000	
*Imports in square yards	43,758,000	15,962,000	11,749,000	19,741,000	47,799,000	45,779,000	36,337,000	66,100,000	73,484,000	131,142,000	
Available for domestic consumption	9,440,038,000	9,619,320,000	9,936,082,000	8,331,064,000	10,695,780,000	10,658,570,000	9,867,748,000	10,775,857,000	10,360,893,000	10,910,100,000	
Population at July 1st	141,389,000	144,126,000	146,631,000	149,188,000	151,683,000	154,360,000	157,028,000	159,636,000	162,417,000	165,271,000	
Available for per capita consumption in square yards	66.77	66.74	67.76	55.84	70.51	69.05	62.84	67.50	63.79	66.01	

*Countable cloths only.

Intertex announces an important **PRIVATE SALE** of the late-type bleaching, printing and finishing machinery, equipment and supplies of

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Much of this highly desirable equipment was installed during 1955-56 and will pay for itself in a few years. This is only a partial listing. For the best selection, we urge that you contact us immediately, or plan an early inspection at the plant.

1 **Stainless Steel Continuous Bleaching Range, DuPont System,** consisting of: 50" Kemp Singer, radiant flame; Desizing Box with pneumatic squeeze rolls; 3 J Boxes with steaming tubes and exhaust fans; 2 Saturators; 5 Rope washers. Stainless Steel Tanks for storage of Caustic and Peroxide bleach; 2 Foxboro control panels; 2 -30 KW D.C. Motor Generators; 550 volt A.C.

8 **Allen 3 Ton Bleaching Kiers,** 8' dia. equipped with outside heaters; M.D. circulating pumps with Foxboro Temp. Controls.

1 **50" Mercerizing Range,** consisting of: 1 - 2 Roll Butterworth Micro Set Padder, 15 ton cap.; 1 - 3 Roll Butterworth Pneumatic Bullet Padder, 10 ton cap.; 1 - 50" x 60' Winsor & Jerauld Straight Away Tenter with S.S. Top opening clips, M.D.; 1 - 50" Scutcher, M.D. beaters; 1 - 12" Perkins Bin Piler, with guiders, tanks, pumps and control unit; range equipped with 1 - 50 KW Reliance D.C. Motor Generator, 550 volts A.C. 1954 Model.

1 **White Drying Range,** consisting of: 1 - 50" Butterworth Scutcher with double beaters, M.D.; 1 - 50" Butterworth 3 roll Pneumatic Bullet Padder, 10 ton cap. with 2 S.S. rolls and 1 rubber roll; S.S. Tank. Specialty air guiders, M.D.; 1 - 50" Butterworth Micro-Set 2 Roll Padder, 15 ton cap., rubber covered rolls; S.S. tank with Specialty air guiders M.D.; 1 - Butterworth S.S. 30 can dryer, 3 vertical stacks, 35 lbs. pressure; cans 50" face x 23" dia. mounted on B.B. with Union Rotary joints M.D.; 1 - 55" Butterworth Weft Straightner with electric eyes and controls; 1 - 52" x 80' Butterworth High Speed Straight Away Clip Tenter Frame with Andrews and Goodrich Double Penthouse Housing equipped with top open clips, S.S. plates and inserts, Winsor & Jerauld electric guiders M.D.; 1 - 50" Butterworth Pneumatic Simpson Batcher with 2 B.B. steel rolls, cut off, M.D. Range also equipped with 50 KW G.E. D.C. Motor Generator with control and panels. 1947 Model.

2 **Morrison Duplex Sanforizing Ranges** equipped with 50" face x 84" dia. main cylinders and 36" dia. Blanket drying cylinder. Each unit equipped with pup tenters, S.S. top opening clips and electric shoes; 2 -48" Cole Spraying Co. sprayers. 1 Range D.C. M.D. with converter, 1 Range A.C.

9 **Rice Barton and Fales Cloth Printing Machines.** 2 - 5 Color, 2 - 6 Color, 4 - 8 Color, 1 - 10 Color Machines equipped with Mt. Hope model H. Scrays, Dewey & Almy Blanket Washers, S.S. blanket drying cans, Morrison 48" x 60" S.S. Cloth drying cans. All motor driven by General Electric Model A.C.A Adjustable Speed motors 550/3/60. All above machines were re-equipped with blankets, washers, and dryers, scrays, S.S. drying cylinders and motor drives from 1953 to 1956.

3 **Pisse Units,** consisting of: 1 - 44" Rice Barton and Fales 4 Color Cloth Printing Machine; 1 - 42" Rice Barton and Fales 5 Color Cloth Printing Machine; 1 - 40" Rice Barton and Fales 5 Color Cloth Printing Machine. Each unit equipped with Rubber blankets, washers, and dryers, units M.D. by A.C. Variable Speed motors. 550/3/60.

1 - **50" Butterworth Haveg Acid Ager,** with S.S. ball bearing top and bottom rolls; S.S. steam chest; S.S. acid vaporizers; 3 swing folders; S.S. acid storage tanks; exhaust fans; Temp. controls and recorder units. Also complete with D.C. Motor Generator Set 550/3/60. 1950 Model.

1 - **50" Textile Finishing Machine Co. Vat Ager,** 24' long with Temp. recorders, swing folders and exhaust fan unit; M.D.

1 - **60" Textile Finishing Machine Co. Vat Ager,** 24' long converted to Acid Ager. Equipped with 2 S.S. vaporizers, swing folders, M.D.

1 - **50" Butterworth 8 Compartment Open Soaper Range** equipped with S.S. tanks and 8 Micro-Set Squeeze units Ind. M.D. by 3 H.P. D.C. motors; 1 - 10 ton Pneumatic squeeze roll; 1 - 40 Copper Can dryer, cans 23" dia. x 50" face with B.B., Johnson joints, ceiling swing folder, 3 roll compensator; 2 Haveg Mixing tanks. Unit complete with 50 KW D.C. Motor Generator Set, Control Panel and S.S. Exhaust hoods.

7 - **50" Hennekens Type 304 S.S. Dye Jiggs,** equipped with 2 H.P. 550/3/60 Gearhead Motors. 1955 Models.

1 - **50" Van Vlaanderen and 1 - 50" Werner S.S. Dye Jiggs,** Ind. M.D. by 2 H.P. Gearhead Motors 550/3/60.

1 - **Indigosol Dye Range,** consisting of: 1 - 50" Butterworth 2 roll Pneumatic Bullet Padder 10 ton cap. M.D. by 15 HP G.E. type A.C.A. Variable speed motor 550/3/60; 6 Compartment open soaper equipped with 2 - S.S. compartments and 4 cast iron compartments with squeeze rolls; 1 - 30 Copper Can Dryer, cans 23" dia. x 50" face. Unit equipped with J Box, swing folder, S.S. exhaust hood; 2 - S.S. storage dye tanks and steel soap tanks.

1 - **Direct Dye Range,** consisting of: 1 - 50" Butterworth Scutcher; 1 - 50" Butterworth 3 Roll Pneumatic Bullet Padder, 15 ton cap.; 2 - S.S. rolls, 1 rubber roll M.D. by 20 H.P. D.C. motor; 1 - 50" Butterworth S.S. 48 can 50 lbs. pressure, cans 23" dia. x 50" face with Johnson Joints, 6 vertical stacks M.D. by 6 3 H.P. D.C. gearhead motors; 1 - 56" Butterworth 3 roll compensator; 1 - 56" Butterworth Weft Straightner; 1 - 50" x 30' Winsor & Jerauld Straightaway Clip Tenter Frame equipped with top opening clips, S.S. Plates and inserts, electric guiders. Unit M.D. by 20 H.P. D.C. motor; 1 - 50" Butterworth Simpson type Pneumatic Batcher, with 2 B.B. steel rolls, cut off, M.D. by 3 H.P. D.C. gearhead motor; ceiling swing folder. Unit equipped with 50 KW G.E. D.C. Motor Generator with controls and panels. 550 volts A.C.

1 **66" Procter & Schwartz 6 Section Loop Dryer** equipped with 6 ind. motor driven fans. 1953 Model.

2 **50" x 90' Butterworth Straightaway Clip Tenter Frames,** swing type, enclosed in Andrews & Goodrich Double Penthouse Tenter Housing 176' long x 23' 6" wide x 12' 3" high). Tenters equipped with top opening clips, S.S. plates and inserts, Specialty air guiders, Winsor & Jerauld electric guiders, swing folders. Units ind. M.D. by 25 H.P. D.C. Motors, blowers and fans on housing M.D. by A.C. 550/3/60 motors.

1 - **50" x 60' Butterworth Straightaway Clip Tenter Frame,** with Andrews & Goodrich Double Penthouse Housing equipped with top opening clips, S.S. plates and inserts, Foxwell air guiders, Winsor & Jerauld electric guiders, 50" Morrison B.B. ceiling swing folder. Tenter M.D. by 25 H.P. D.C. Motor, fans and blowers on housing M.D. by A.C. 550 volt motors.

2 - **50" Butterworth 24 S.S. Can Dryer,** 65 lbs. pressure, 3 vertical stacks, cans 23" dia. x 50" face mounted on B.B. with Johnson joints; 3 roll compensator; bow expander roll; Ind. M.D. by 7½ H.P. D.C. Motors. 1953 Models.

1 - **50" Morrison 48 S.S. Can Dryer,** 50 lbs. pressure, 5 vertical stacks, cans 23" dia. x 50" face, mounted on B.B. with Johnson joints; 3 roll Mt. Hope bow expander; Specialty Air guiders. M.D. by 3-5 H.P. D.C. Gearmotors. 1952 Model.

4 - **56" Simpson Type Batchers,** with 2 steel B.B. rolls, cut off, yardage counters. Ind. M.D.

1 - **50" Butterworth Simpson Type Pneumatic Batcher,** with 2 steel B.B. rolls, cut off, yardage counter. M.D. by 3 H.P. D.C. motor. 1952 Model.

1 - **50" Simpson Type Batcher,** with 2 steel B.B. rolls, cut off, yardage counter. M.D. by 3 H.P. D.C. Motor.

2 - **50" Birch Bros. Vacuum Scutchers,** with B.B. beaters, slotted tube, swing folder, expansion tank and Nash Size L.6 Hytor Vacuum Pump. M.D. by A.C. 550 volt motors.

1 - **42" Perkins Hydraulic Schreiner Calender,** 100 ton cap., equipped with cooling can, unrolling and batching unit; S.S. hood with exhaust fan; pump and accumulator; M.D.

1 - **48" Butterworth 3 Roll Friction Calender,** S.S. cooling can, unrolling and batching unit. M.D.

4 - **Reliance & General Electric Variable Speed D.C. Motor Generators,** 3 - 50 KW, 1 - 40 KW. 1952-1953 Models.

2 - **46" Parks & Woolson Chinaman Doublers,** with backboard inspecting table, yardage counter. Ind. M.D. by 2 H.P. A.C. 550 volt motor.

2 - **Sullivan Vertical High Pressure Air Compressors,** size 9 x 9, 325 lbs. press., Ind. M.D. by 50 H.P. 550/3/60 motors. Unit also equipped with after cooler and receiving tank.

4 - **Hyster** Model 20 Gasoline Driven Fork & Grab Lift Trucks—2000 lbs. cap.

Approx. 300 Wood Slatted Box Trucks with angle iron reinforced corners and platforms, B.B. rubber casters 6" dia. front and back swivel I.D. 60" L x 40" W x 35½" D.

Approx. 150 Wood Slatted Box trucks with angle iron reinforced corners, 8½" dia. iron caster, I.D. 53" L x 40½" W x 30½" D.

Lot of Buffalo Vaneaxial Exhaust Fans Ind. M.D. Sizes 15" - 24" - 36".

MISCELLANEOUS EQUIPMENT

Also available: Machine Shop, Carpenter Shop, Tin Shop, Pipe Shop, Color Shop, Office Equipment, First Aid Room, Electric Water Coolers, 48" 2 tube flourescent lights, 2 wheel warehouse trucks, cloth roll trucks, tables, S.S. batch cans and dippers and scoops, shell rolls, sewing machines (Merrow & Railway), lift trucks, box trucks, exhaust fans, and hundreds of other items too numerous to mention.

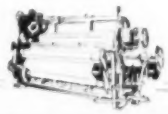

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Figure 1. Effect of epoxy resin concentration on crease resistance.

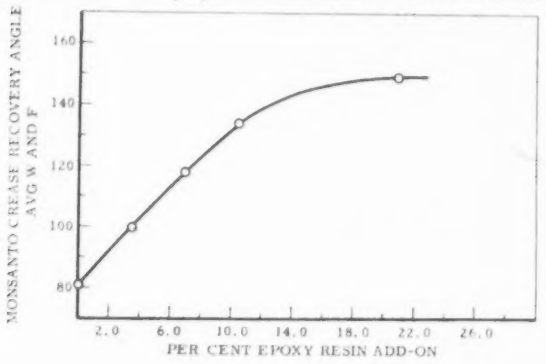
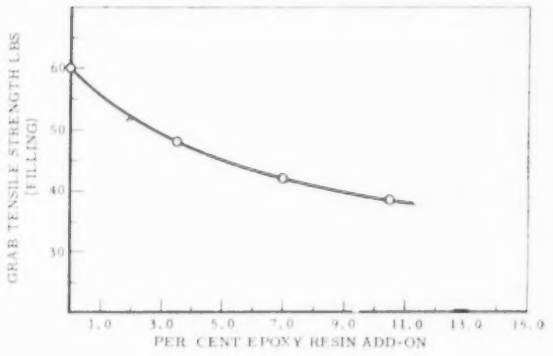


Figure 2. Effect of epoxy resin concentration on tensile strength.



Epoxy resins are non-chlorine-retentive, so they produce

Crease-proof fabrics that stay strong

by C. W. Schroeder
and F. E. Condo
Shell Development Co.

Abstract*

THE EPOXY resins are an entirely new class of compounds for the crease-proofing of cotton, unlike any other commercially available crease-proofing resin. Their most outstanding feature is the fact that they contain no nitrogen, and are therefore absolutely non-chlorine-retentive.

All of the well-known resins which impart a substantial degree of crease-resistance contain formaldehyde, therefore some have felt that the material used is merely a carrier for formaldehyde which is liberated to give the noted effects. The fact that epoxy resins do give crease-resistance while they contain no formaldehyde should help to dispel this theory. The absence of formaldehyde is also of practical value in that odor development which may occur with nitrogen-formaldehyde resins cannot occur with epoxy resin-treated fabrics.

With the epoxy resins, it is now possible for the first time to obtain a crease-resistant white fabric which can be bleached and ironed without scorching or loss of strength. Furthermore, the non-chlorine-retentive property is not destroyed by repeated hot alkaline washing or by repeated washing and chlorination, as is the case with "chlorine-resistant" types of nitrogen-formaldehyde resins.

*From paper presented during the Fifth Chemical Finishing Conference.

PROCESSING

The application of epoxy resins to cotton fabric is carried out with conventional equipment, using conventional drying and curing schedules. The fabric is padded through a mix of desired solids content and squeezed to give the desired solids pick-up on the fabric.

The fabric is then dried in a clip or tenter frame for about 2 minutes at 240 F. Drying at a variety of temperatures has always given soft fabrics, indicating that resin migration does not take place.

The dried fabrics are then cured. Cure can be carried out at various elevated temperatures depending on cure time. For instance, at 320 F full cure requires 5 minutes, whereas at 375 F cure is accomplished in about 1 minute to 1½ minutes.

White fabrics have a slight yellow hue after cure, but this is removable by bleaching in peracetic acid, hydrogen peroxide, or sodium perborate.

Quite a number of epoxy containing compounds have been synthesized and evaluated in the crease-proofing of cotton. As would be expected, these compounds have varying degrees of effectiveness. Based on over-all performance, cost, and other factors, an experimental resin was selected as being the best candidate and is now being marketed under the name of Eponite 100.

Physical Properties of Epoxy Resins

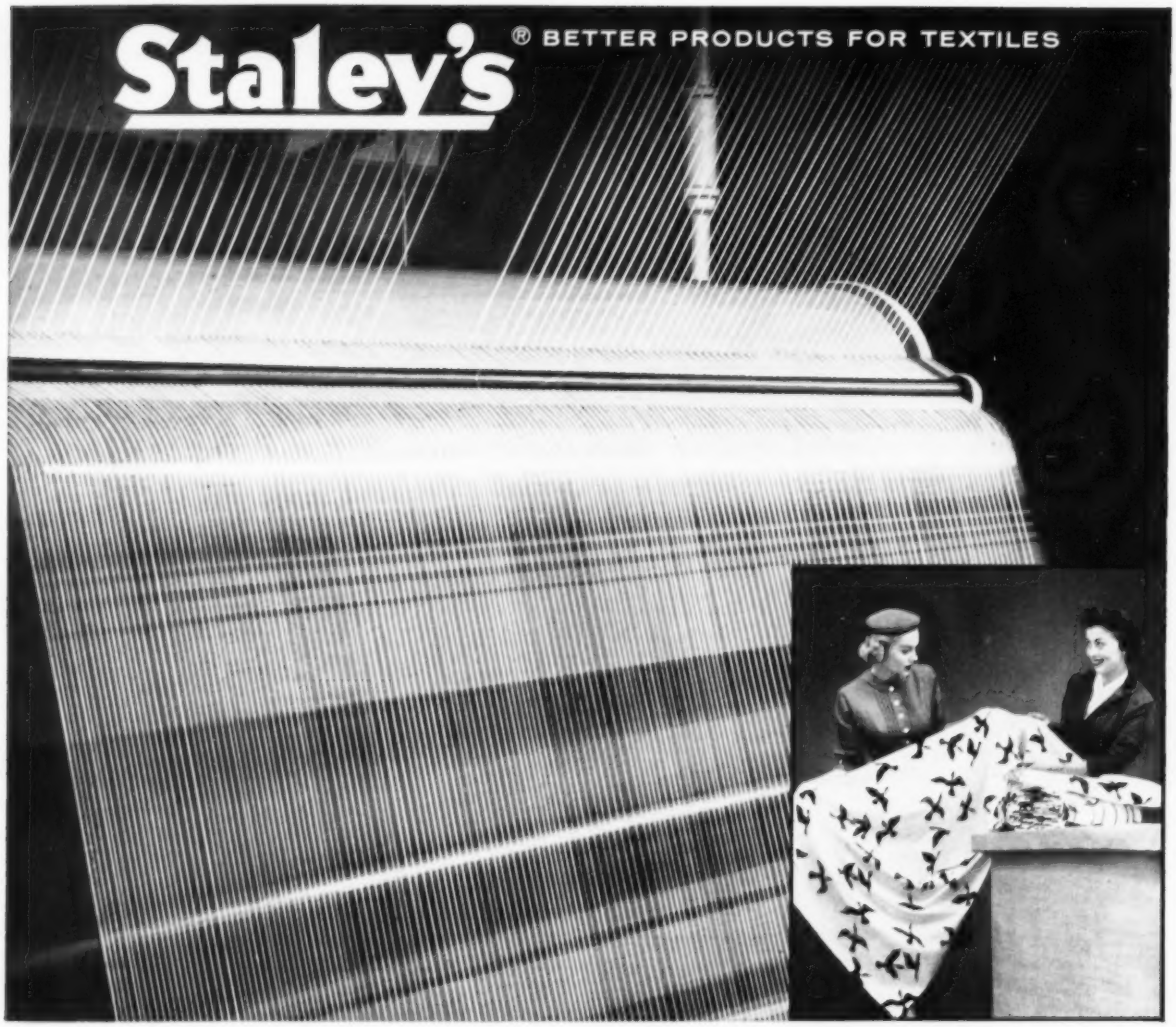
Resin solids	100%
Effect of freezing	None
Storage stability	Excellent
pH	Neutral
Odor	Slight
Viscosity	1-150 Poises
Color	1-10 Gardner
H_2O solubility	Variable

CATALYSIS

Catalysts which are ordinarily used with nitrogen-formaldehyde resins are not effective for epoxy containing compounds. For instance, the amine hydrochlorides, metal halides, or ammonium phosphate do not produce the desired effect. Stronger catalysts such as the fluoborates, perchlorates, or sulfates are required.

A number of metal fluoborates have been examined to determine their catalytic activity. It was found that zinc, magnesium, and aluminum fluoborates were excellent catalysts.

Since zinc fluoborate has given the best results, it is being recommended for use with the epoxy resins. The optimum amount to use has been determined at 7¼ parts of the hexahydrate per hundred parts of epoxy resin. This



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Low weave-room efficiency was stealing profits from this mill at a fast rate. End breakage in the loom caused dollar loss in machine downtime, lost man-hours, and disruption of production and delivery schedules.

The problem was given to a Staley Technical Sales Representative. After checking conditions carefully, he recommended Staley's Eclipse Starch as a more effective sizing starch, and suggested several changes that would give plant operators closer control over production.

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is equivalent to 12.5 parts of the 40% solution or 5 parts anhydrous.

As is the case with all crease-proofing resins, increase in resin content gives increase in crease - resistance, with the first increments giving the highest proportional effect. The data shown in Figure 1 were obtained on 80 x 80 cotton print cloth impregnated with various amounts of an epoxy resin, using 5 parts of anhydrous zinc fluoborate.

The impregnated fabrics were dried for 5 minutes at 194 F, and cured for 5 minutes at 320 F.

Likewise, tensile strength of the fabric is lowered as the add-on of epoxy resin is increased. At 3.5% resin add-on, a 20% strength loss is obtained, whereas at 10.5% resin a strength loss of 36% is obtained.

Usually tensile strength decreases linearly as crease recovery increases. This is not the case with epoxy treated cotton. At low resin add-on, more strength is lost than would be predicted from the gain in crease recovery. At high crease resistance, however, strength loss of epoxy treated fabrics is the same as ethylene urea-formaldehyde treated fabric.

As resin add-on is increased, tensile loss becomes proportionately less in comparison to crease recovery obtained; the curve actually flattens out, giving crease recovery without appreciable loss in strength.

It is common practice in resin finishing to employ a softener, lubricant, or plasticizer to improve mechanical properties. Most of the common softeners used by the resin finishing industry are not suited for use with epoxy resins because of color or lack of chlorine-resistance. The type of softener recommended for use with these resins is an epoxidized unsaturated vegetable oil, such as epoxidized soya bean oil. Twenty parts of softener per hundred parts of epoxy resin gives good results, although this amount may be varied to fit certain conditions.

Softeners containing nitrogen should be avoided since this introduces the possibility of chlorine retention.

Tensile strength can be similarly improved by the addition of elastomeric latices. The addition of, for instance, 30 parts of Hycar 1561 per hundred parts of epoxy resin raises the tensile strength from 42.9 pounds to 51.1 pounds. In addition, the crease recovery is raised from 124° to 136° and the tear strength from 1.04 to 1.27 pounds.

The addition of larger amounts of rubber does not appear to be helpful to crease recovery or tensile strength, but does seem to continue to help tear strength.

Many elastomeric latices on the market contain anionic emulsifiers or additives which are not compatible with the epoxy resin system. Therefore tests should be made with any latex before attempts are made to use them in production.

Qualitative Comparison of Properties Usually Associated with Various Cotton Crease-Proofing Agents

Crease-Proofing Agent	Crease Resistance	Strength	Dimensional Stability	Durability Laundering	Resistance to Acid Hydrolysis	Luster
Epoxy resins	3	2-3	4	4	4	4
Ethyleneurea-formaldehyde	4	2-3	3	3	0	3
Melamine-formaldehyde	4	3	3	3	0	2
Urea-formaldehyde	3	2-3	2	0	0	2
Formaldehyde	0-4	0-2	4	4	0	4
Untreated cloth	0	4	0	—	—	4

4 = best; 0 = worst

QUALITATIVE COMPARISON

The properties usually associated with cotton crease-proofing agents are summarized in the accompanying table. In this summary a figure of 4 indicates best performance while a figure of 0 indicates poorest performance. It should be emphasized that this presentation is merely a qualitative comparison and does not apply to special results obtained by some manufacturers.

The epoxy resins give slightly less crease-resistance than can be obtained with either the ethyleneurea- or melamine-formaldehyde resins. Effectiveness of the epoxy resins is about equal to that obtained with the urea- and ethyleneurea-formaldehyde resins and slightly lower than that obtained with the melamine-formaldehyde resins. Dimensional stability achieved is as good as that achieved with high loadings of formaldehyde but strength loss is much less.

Luster of fabric treated with epoxy resins is excellent, being as good as untreated fabric in comparison to the decrease in luster obtained with other resins. In addition, epoxy resins do not change the feel of the fabric in comparison to some resins which may leave the fabric harsh and boardy.

The absence of odor during processing, the absence of odor on the finished fabric, and the absence of fish odors during storage which sometimes develops with nitrogen-formaldehyde resins are also advantages in favor of the epoxy resins.

Durability of the epoxy resin finish to laundering is excellent, the fabrics retaining substantially all of their crease resistance for the life of the garments. In resistance to acid hydrolysis the epoxy resins are unique, being the only crease-proofing resins which are able to withstand acidic conditions.

If you progress with the times, you must realize that the advantage of new machinery is judged today by the results it produces in the way of better quality at lower cost . . .

3 WAY SCRAY a space saver in a cotton finishing range

for cotton and synthetic goods

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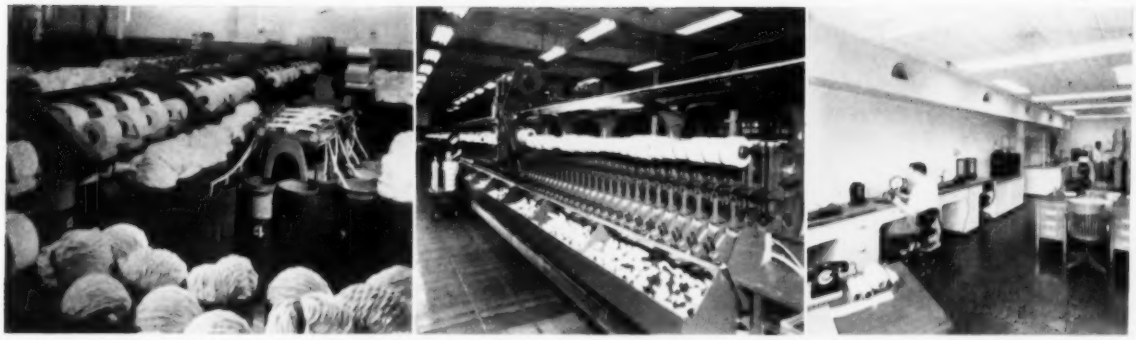


Modern processing and quality control equipment, some of which is pictured here, is considered one of the principal factors contributing to the success of this New England knitting and weaving yarn manufacturer.

Fitchburg Yarn celebrates 50th anniversary

Staff report

■ WITH AN open-house celebration on December 14, 1956, Fitchburg (Mass.) Yarn Co. marked its 50th year as a manufacturer of knitting and weaving yarns. Guests were conducted on a tour of the company's three manufacturing plants—Wachusett Spinning Mills, Watatic Spinning Mills, and Fitchburg Yarn Co.—which produce cotton, worsted, merino, rayon, Orlon, and Dacron yarns in a wide variety of blends and counts ranging from 16s to 120s.

The flexible and modern production facilities, which include 95,000 spindles and over a half-million square feet of floor space, were said to be capable of spinning about 3.5 million miles of yarn per week. More than 14 million pounds of raw materials are utilized annually.

At a dinner Frank W. Lyman, president and treasurer of Fitchburg Yarn, outlined the factors that have been responsible for the company's growth, and pointed confidently to the future of the textile industry in New England.

A continual modernization program, an open-minded approach to new advances in technology, along with research and development to produce an uninterrupted stream of improved products, were some of the principal factors of success cited.

A great asset of New England, Mr. Lyman declared, is its people who are industrious and receptive to new ideas and developments. The climate is conducive to technological progress, he said.

"With the new fiber developments by the chemical companies and our spinning know-how and pioneering spirit, we are creating and will continue to create yarns with characteristics undreamed of by the average consumer," Mr. Lyman concluded.

Mothproof woolens for five years

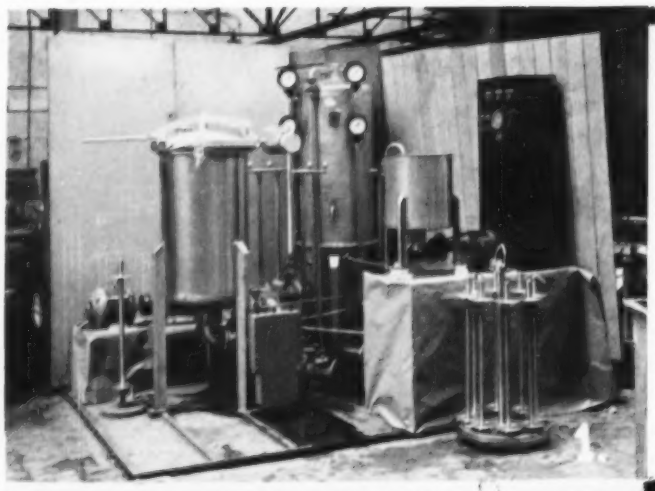
■ WOOL processors are reported to be profiting by research conducted at the USDA Savannah Stored-Product Insect Laboratory where it has been found that DDT provides protection for raw wool, wool tops, and wool fabrics from pest damage for as long as five years without need for retreatment or reinspection.

An article in the December, 1956, issue of *Agricultural Marketing*, points out that these products absorb DDT from a very dilute nonionic emulsion. A predetermined amount can be deposited by simply adding to a water bath a measured amount of a special emulsion called "EQ-53" in relation to the weight of the material to be treated.

At a cost of 1 cent a yard woolen and worsted fabrics can be treated during the sponging operation by substituting the DDT emulsion for clear water ordinarily used. EQ-53 can also be added to rinse water in the last stage of scouring grease wool, and the resulting deposit of DDT will remain through carding and combing, the author states.

In addition to considerable savings in chemical costs (for naphthalene flakes, etc.), the new method of treatment saves manpower. It removes the need for constant surveillance and the reapplication of protective agents. The DDT-impregnated cloth can now be put in cartons and stored for as long as five years without need for retreatment or inspection. The cartons permit palletized storage for the use of modern, efficient warehousing procedures.

Household woolens, clothing, rugs, and animal fibers that cannot be washed may be successfully treated with DDT sprays, according to the report.



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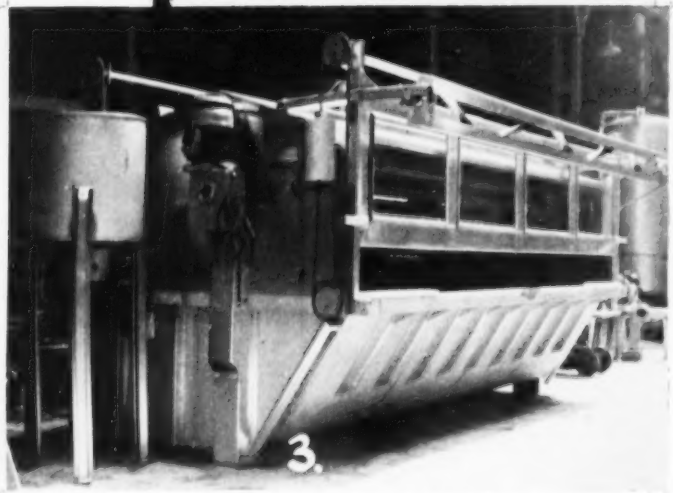

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* MANUFACTURERS OF A COMPLETE LINE

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Used extensively for many years in countries that depend heavily on textiles in their economy, these machines are now being presented in the U.S.A. for the first time by NEMO INDUSTRIES, INC., sole representative in the U.S.A.

There are some interesting facts concerning the quality of these machines and the cost involved which you should know before making any purchase of this type of equipment. Write, wire, or call us collect at CE. 7-1947 in Atlanta, Georgia.

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The new NEMO JET COOKER does it! See the results of a test run at your mill without disturbing normal operations. An exclusive development of NEMO INDUSTRIES, INC.

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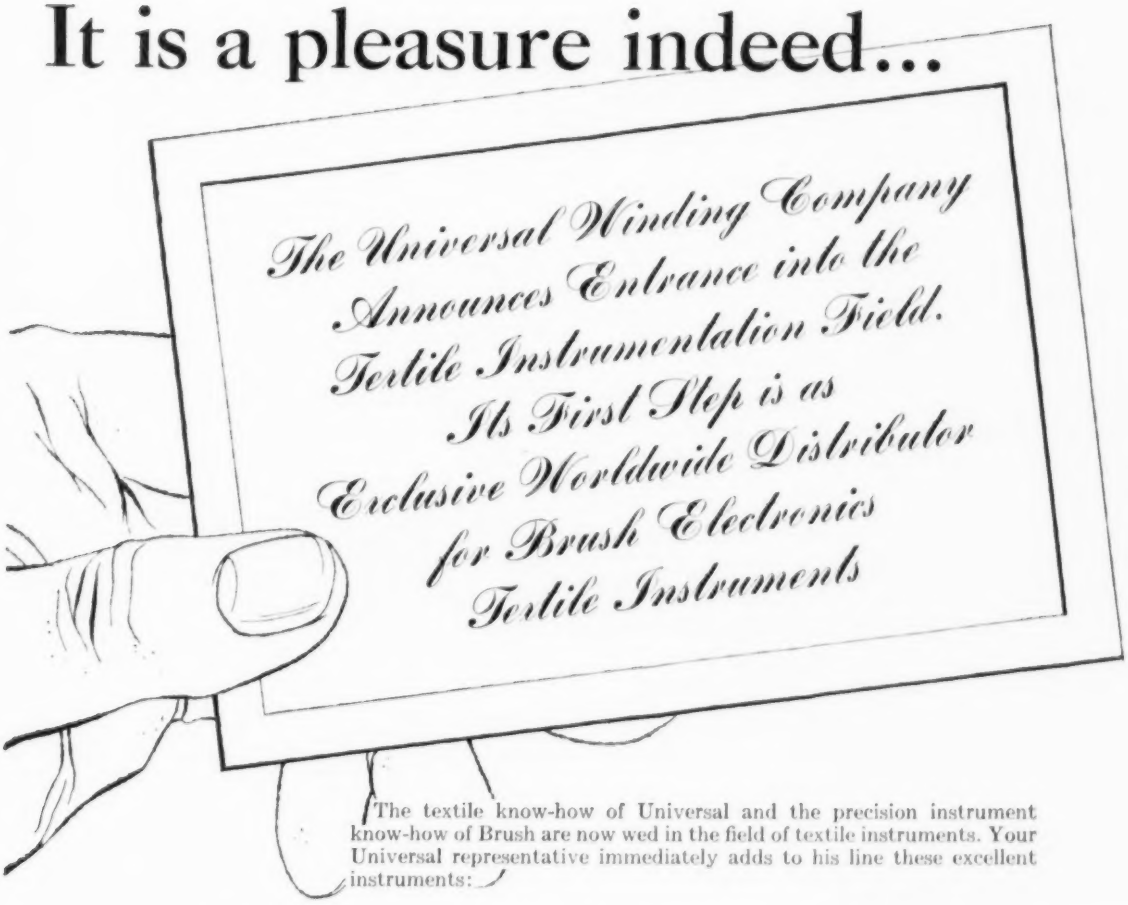

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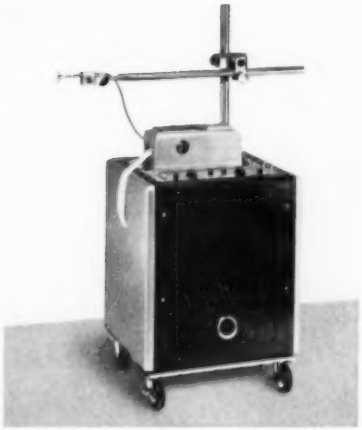

● *The Brush Tension Analyzer* for electronic tension measurement and control in production departments

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Mills that have thoroughly tested this new Nopco method report substantial savings. They not only eliminate top-waxing, but gain the additional advantages of better splitting at the split rods, and cleaner greige goods and knots.

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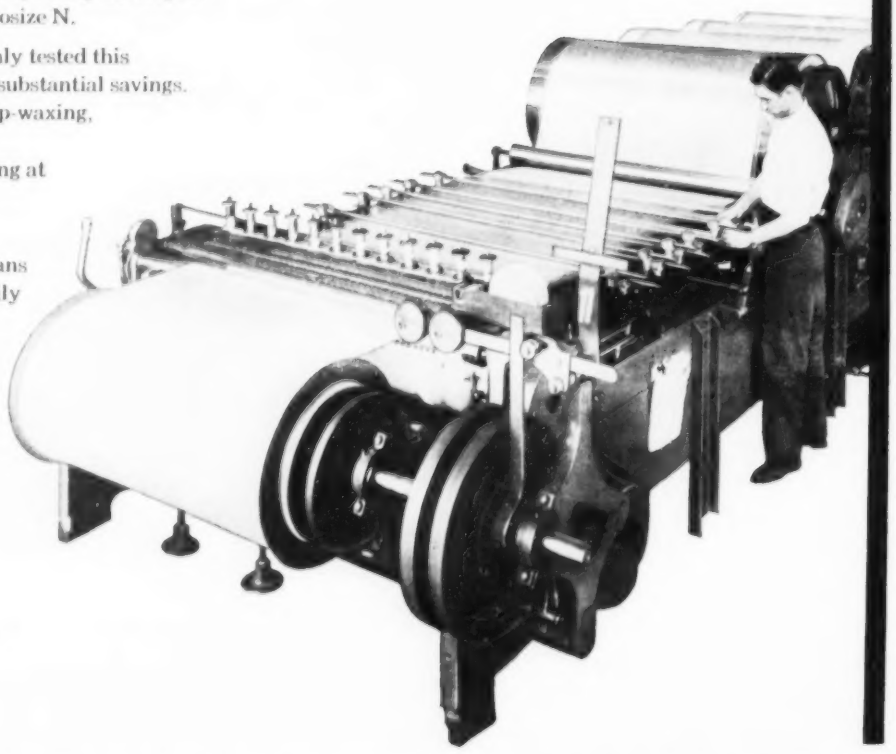

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PLANTS: Harrison, N. J.
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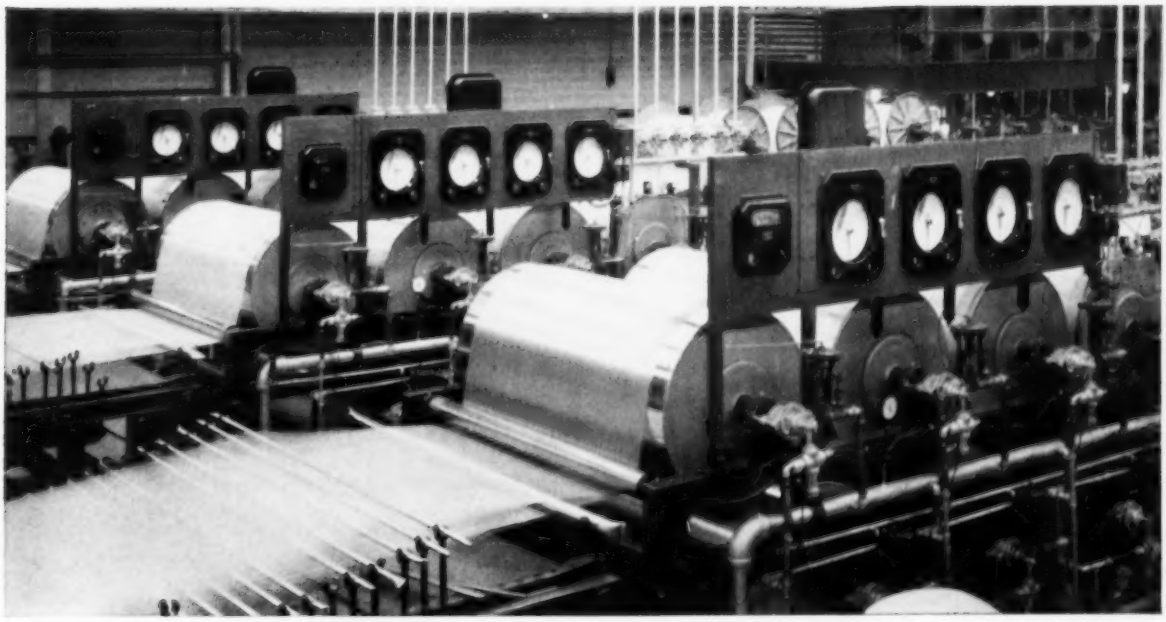

FOR the best slashing results, the Taylor method of controlling moisture content of the yarn by regulating the surface drying temperature of the slasher cylinders is the most accurate of any yet devised. And there are Taylor systems for the lightest filaments or heaviest spun yarns.

It has been proven that the Taylor Control System will increase weave room efficiency regardless of the type of yarn being run, or the number of cylinders on your slasher.

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Whether your high-speed slasher is 5, 7, 9, or 11-cylinder, rayon or cotton, you can equip it with Taylor individual or group cylinder control.

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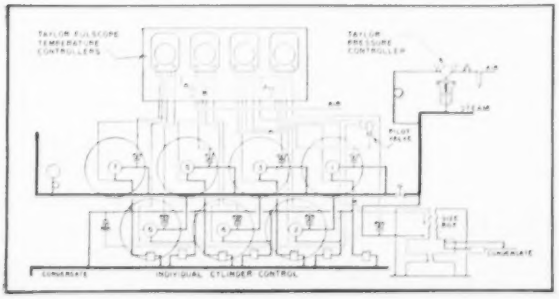
Ask your Taylor Field Engineer, or write for **Bulletin 98229** for details of Taylor systems for *size cooking, storage kettle temperature control, size box level and temperature control*, as well as *slasher cylinder temperature and pressure control*. Taylor Instrument Companies, Rochester, New York, and Toronto, Canada.



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(for staples from $2^{3}/_{8}$" to 8")

We take pleasure in announcing a new technique designed for American mills

Processing techniques for materials of staple lengths exceeding those of the normal cotton range expose an urgent need for a short sequence of operations and an efficient high draft system for sliver and roving which will embrace the full range of fibre lengths, deniers and types of man-made fibres, and blends of these fibres with each other and with wool. We are now able to offer a drafting system which meets completely these requirements. The successful development of the Platt "Versatex" LS (long staple) system for both M.S.2 speed frame and M.R.3 ring frame applications opens up wide fields for the employment of these materials by enabling them to be processed on a commercial scale both economically and effectively. Extreme flexibility and simplicity of operation characterises this drafting system, which is particularly suited to high speed and large package conditions. May we send you more information?

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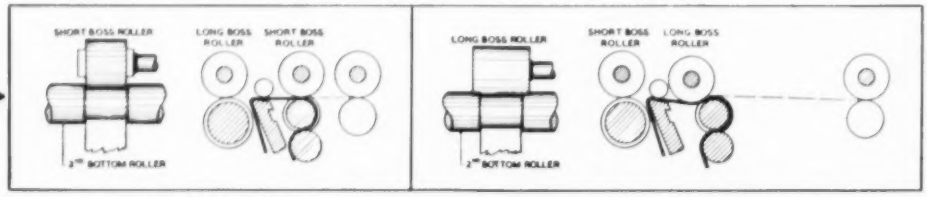
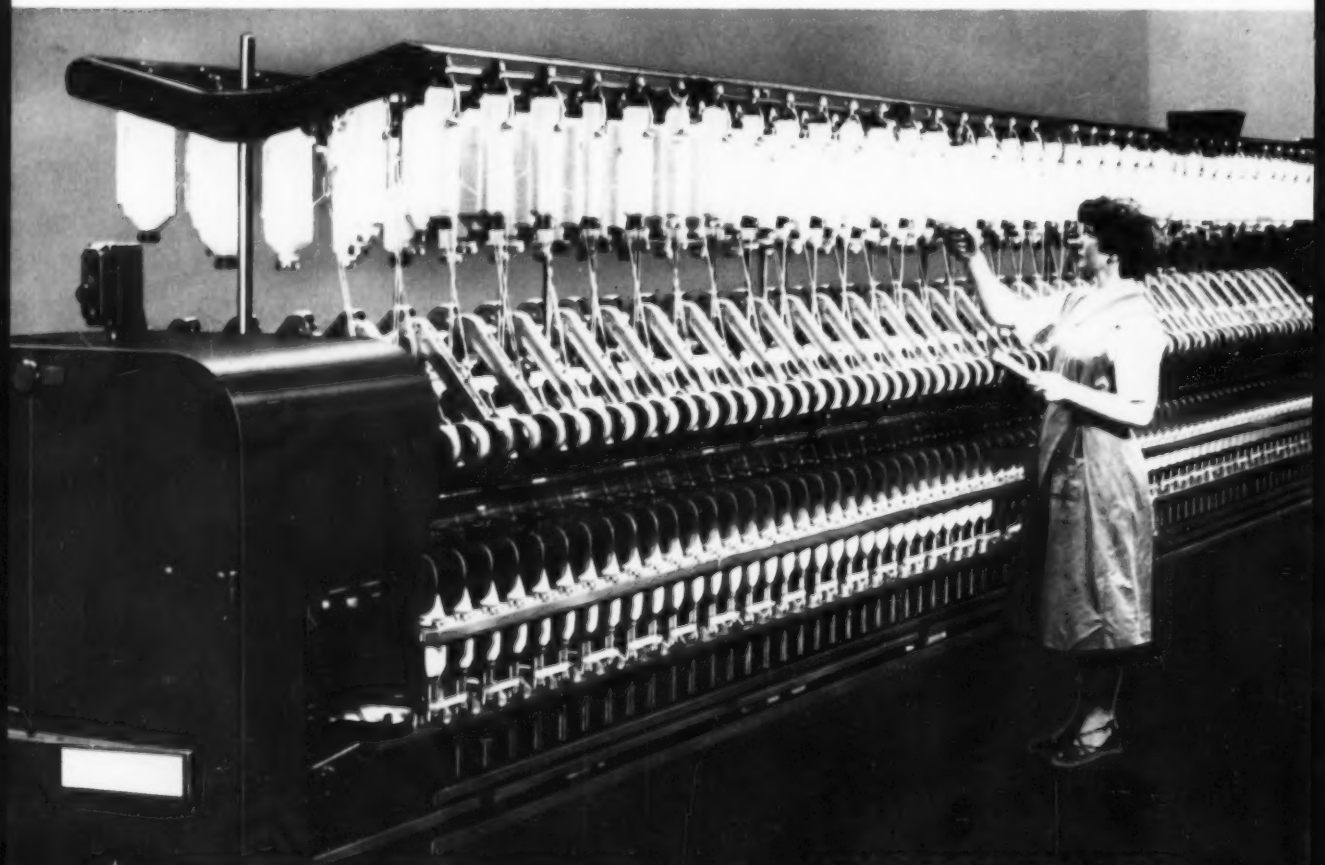


SETTING FOR SHORTER STAPLES

SETTING FOR LONGER STAPLES



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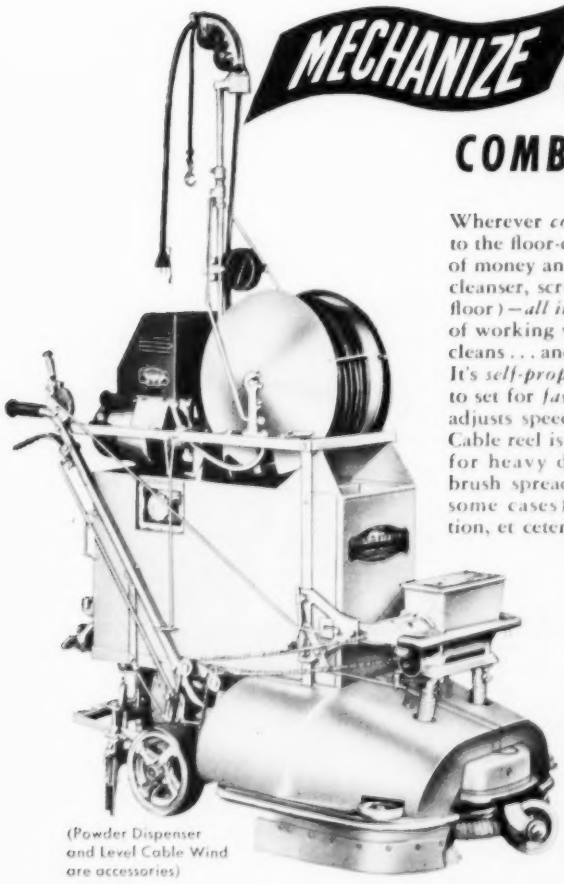
COMBINATION SCRUBBER-VAC!



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Wherever *combination-machine-scrubbing* is the practical solution to the floor-cleaning problem, any lesser, slower method is wasteful of money and manpower. A *Combination Scrubber-Vac* applies the cleanser, scrubs, flushes if required, and picks up (damp-dries the floor)—*all in one operation!* Maintenance men like the convenience of working with this single unit . . . the thoroughness with which it cleans . . . and the features that make the machine simple to operate. It's *self-propelled*, and has a *positive* clutch. There are no switches to set for *fast* or *slow*—slight pressure of the hand on clutch lever adjusts speed to desired rate. The powerful vac performs quietly. Cable reel is self-winding. *Model 213P Scrubber-Vac* shown at left, for heavy duty scrubbing of large-area floors, has a 26-inch brush spread. Cleans up to 8,750 sq. ft. per hour (and more in some cases), depending upon condition of the floors, congestion, et cetera.

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2. There is a definite improvement in yarn quality as a result of uniform tension at all stages of the doff.
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Now is the time to better your operations by replacing your obsolete filling spindles with this new Saco-Lowell unit. Under ordinary conditions the advantages accruing from the increase in production, the improvement in quality, and the overall efficiency of the spinning frame, will surely repay the entire capital investment.

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HOW OTHER MEN MANAGE

• Letters to Editor • Technical Discussion •
• Manufacturing Briefs • Kinks & Short Cuts • Comments from Readers •

Write to the Editors!

Readers are invited to make use of this section for further discussion of published articles, or for discussion of problems arising in the plant. Names will not be used without permission. Payment is made for practical articles or for letters containing manufacturing information.

Address: Editor, "Textile Industries," 806 Peachtree St., N. E., Atlanta 8, Ga.

More ways to stop blowing card fly

(On page 153 of the December, 1956 issue of TEXTILE INDUSTRIES *Contributor No. 8936 asked for advice on correcting fly blowing from around the ends of his card cylinder. The following is one mill man's answer to that problem.—The Editors)*

EDITOR TEXTILE INDUSTRIES:

This is in reply to CONTRIBUTOR No. 8936 regarding fly wedging and creating heat between the card cylinder and the arches. There are three things which can cause this trouble, one of which CONTRIBUTOR No. 8936 discussed. I shall discuss the other two herein.

Once right after I had accepted a job as overseer of a card room into which had been moved a number of old cards to increase the card room capacity, a grinder came to me and wanted me to order a new screen. I went with him to inspect the card for which he wanted the screen ordered.

The screen damage had been caused by chokes or laps being jerked into the card as the laps ran out. The screen had been repaired in the mill shop, and the shop personnel had soldered the screen ribs in without using a template to form the proper circle (to conform to the diameter of the cylinder). I ordered a new screen for the card.

I began to check the other cards over the room and found that wherever lint was blowing out the sides of the cards the lap guides were missing. The selvage was allowed to creep from side to side without regard to the cylinder edges.

Then I began to check the licker-in and cylinder bearings. I found some of them worn until the lickers-in and cylinders had dropped to the worn sides of the bearings and were crowding the shields and the arches.

I remedied this as best I could, but failed to correct all the troubles. I began to have the card screens taken out as each card was ground. We brushed the screens clean inside and out, and wiped the insides of the arches and frames right down to the floor to remove all oil and grease where it had run down from the cylinder and licker-in bearings.

Just inside the card frame, and under the cylinder bearings, are pockets in the frame formed to lead all oil outside of the card and hold it to keep it from dripping down the frame sides. If allowed to overflow from the oil which runs out each end of the cylinder bearings, the oil will run down the card sides onto the cylinder rims and screens. Oil at these places catches lint and causes chokes to form between the cylinder and the frame sides.

This oil will soften the clothing foundation and also stop up the screens. The oil will sling onto the grinding fillet and reduce its cut-

KINK CONTEST

$100 will be awarded the winner

Send your entry now! This contest ends April 15, 1957

Every kink, short-cut, time-saver, or quality improvement suggestion entered in the contest will be paid for immediately upon acceptance. The $100 award will be made as soon as all entries are judged.

The contest rules are simple:

► All contributions must be postmarked not later than midnight, April 15, 1957.

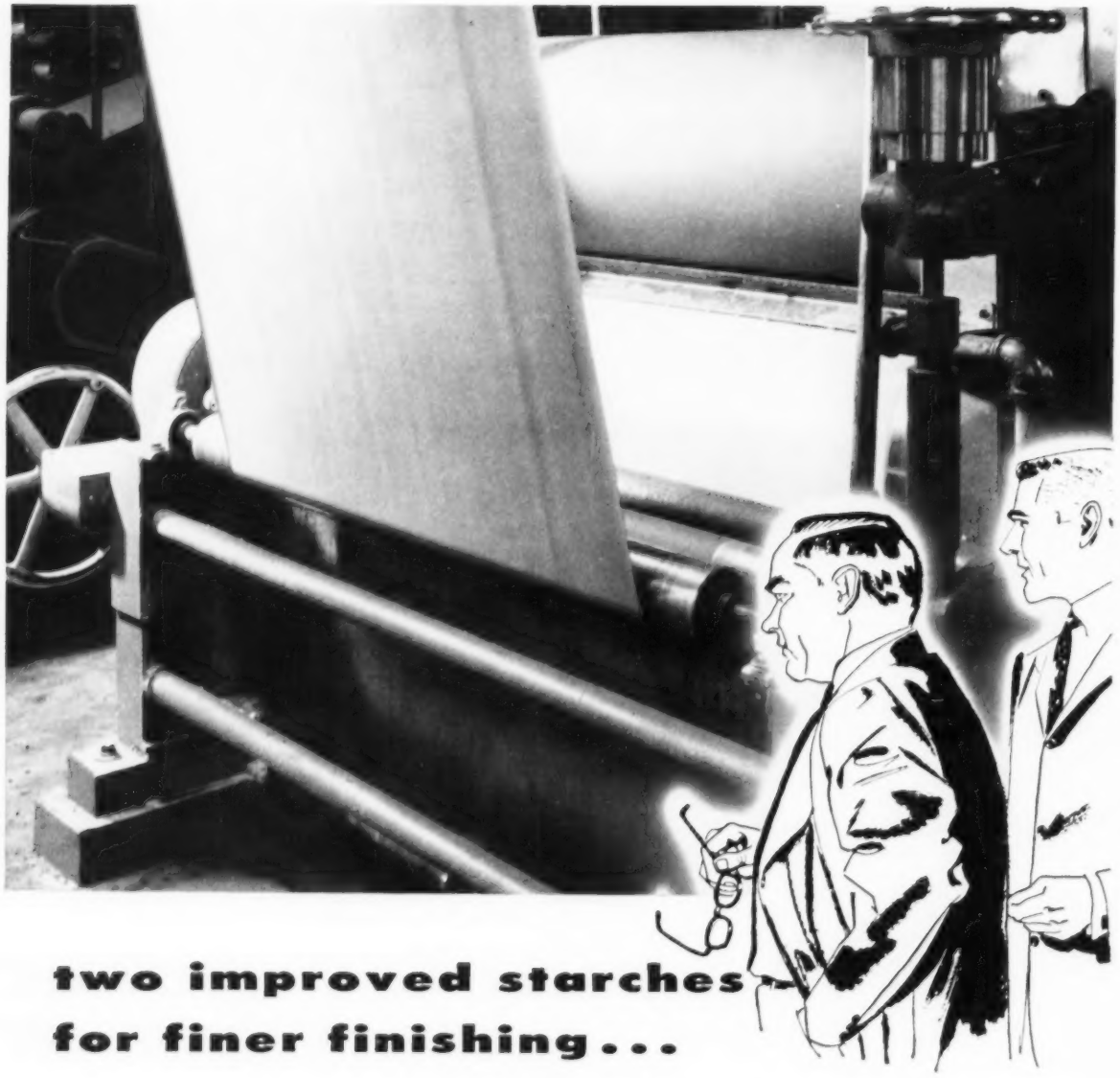
► No limit to the number of entries an individual may submit in any one contest.

► All entries paid for upon acceptance — no waiting. Extra payment for photographs that are usable. Extra consideration is also given kinks accompanied by legible pencil sketches or drawings.

► Entries must not have been published previously and must not be submitted to any other publication.

Send your contest entry to:

Editor TEXTILE INDUSTRIES, 806 Peachtree St., N. E., Atlanta 8, Ga.



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ting action at the edges. The lack of cutting action will lay the wire back in the oil-soaked selvages. This will cause high selvages on the clothing, a condition which is very bad—only stiff new clothing will correct it.

I might say that when I removed the card screens and cleaned them, I polished them perfectly dry with card fly or card strips and brightened them with a polishing agent. If CONTRIBUTOR No. 8936 will do this for the cards that are blowing fly, I believe he will overcome his troubles.

CONTRIBUTOR No. 8957

Water level indicator

EDITOR TEXTILE INDUSTRIES:

Some years ago I noticed the "telltales" on our fire buckets in one department were indicating

that some of our buckets were approaching the refill point; yet others appeared to be full. Since we filled our buckets on schedule, it seemed strange that they would undergo such uneven evaporation.

Investigating, I found that some of the telltales were caught on the bails of the buckets, and being caught, would not sink with the drop in water level. That explained the reason for some of the buckets appearing full when they actually were approaching the refill point.

We corrected the condition by removing a part of the stem from the telltales so that the indicator would not extend high enough to reach the bail.

CONTRIBUTOR No. 8948

HOW OTHER MEN MANAGE

How to enlarge an open kier

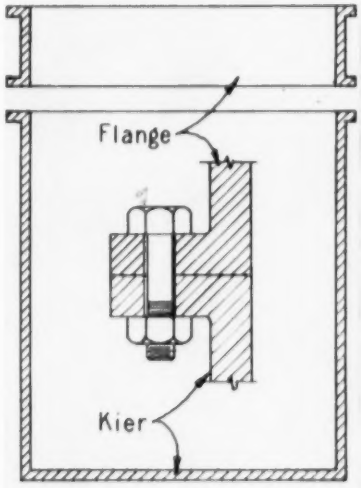
EDITOR TEXTILE INDUSTRIES:

I am sending a solution to one of our recent problems. Our bleach house uses open-type kiers which were running at capacity. We anticipated a large production increase but did not have the room to install additional equipment on short notice.

We solved the problem by having special flanges (2 ft high) machined to the same diameter as the kiers. These were bolted to the top of the kiers and resulted in an increase in capacity of each kier of about 25%.

This additional capacity was added over a week-end without any loss in production.

CONTRIBUTOR No. 8916



Let card reclaim tangled sliver

EDITOR TEXTILE INDUSTRIES:

Even in the best of plants there will be times when a roving can will stop turning; and most of the time it will be a card can which quits. When this happens the trouble will probably be from a worn-out can table gear—worn out or stripped from improper meshing. Or it may be a can with a bad bottom which has escaped notice to this point. Whatever the cause of the failure, the sliver builds up in a straight coil which eventually topples and tangles the sliver against the wall of the can.

Tangled sliver is very difficult to remove from the can, so difficult in fact that it is often returned to the opening room to be rerun. This will, however, increase the neppiness of the cotton.

My way of reclaiming such sliver is to thread the sliver end through the coiler of a card which is being ground with the doffer in slow motion. It is not necessary for the sliver to be threaded through any point except the top trumpet.

The slow motion of the coiler at this point will remove the sliver with a minimum of stretch, and because of its slow motion, will assist the sliver gently from its tangles. I have reclaimed hundreds of cans in this manner, both card and drawing sliver.

Once the coiler is engaged, and the sliver is coiling into another can, the card tender or the section man can keep the end pieced up if it breaks back and otherwise look after the sliver.

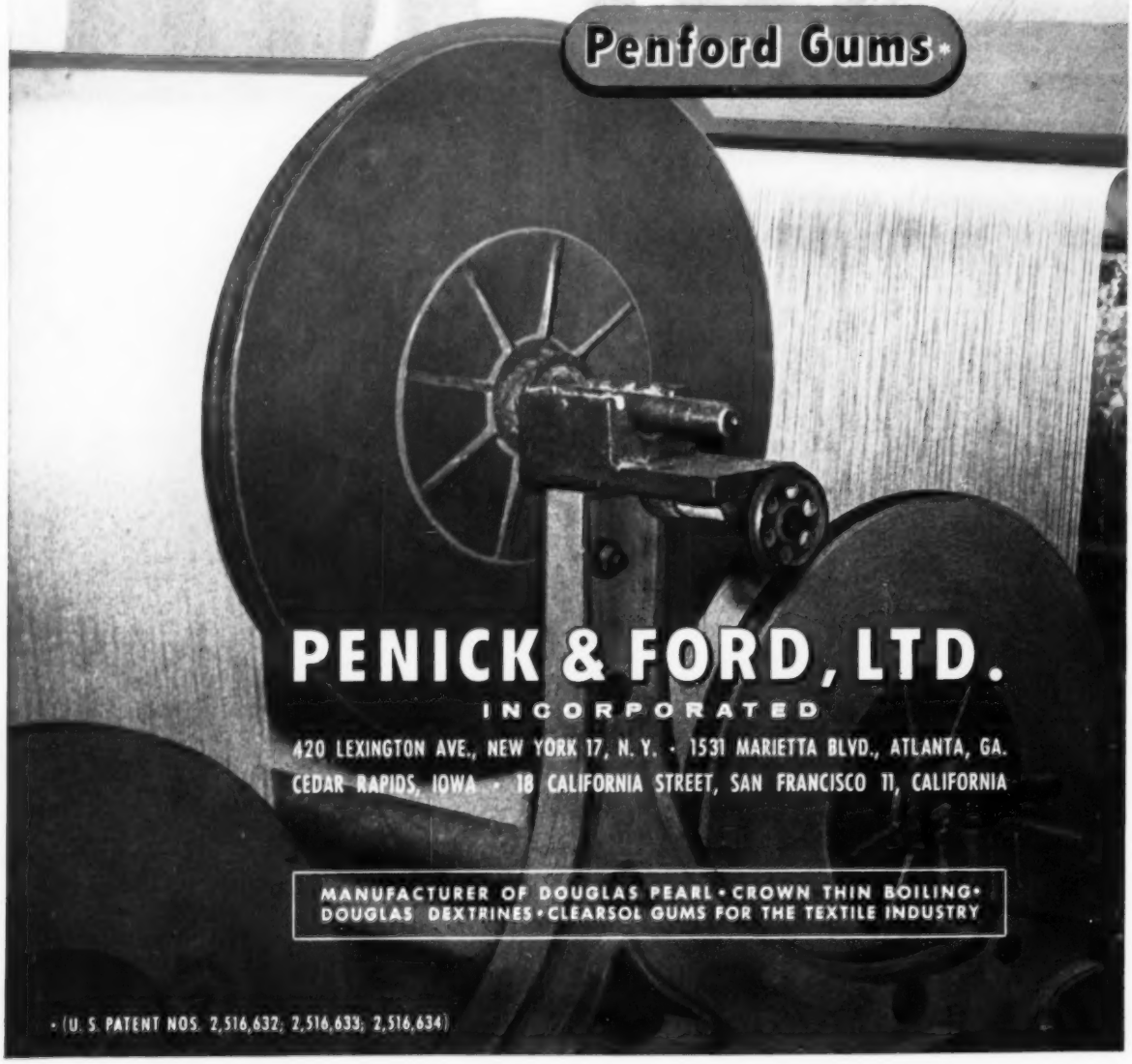
CONTRIBUTOR No. 8951

FOR WARPS THAT WEAVE BETTER ...SIZE WITH PENFORD GUMS

Penford Gums are being used with phenomenal success for warp sizing combed cotton, viscose, worsted, Nylon, Dacron, Acrilan, Orlon, Dynel, staple fibers and blends. They provide excellent weaving protection by increasing abrasion resistance and fiber bonding.

There is a Penford Gum for every warp sizing requirement, and Penick & Ford Technical Sales Service Engineers will gladly assist you by recommending the Gum best suited for your application.

Penford Gums*



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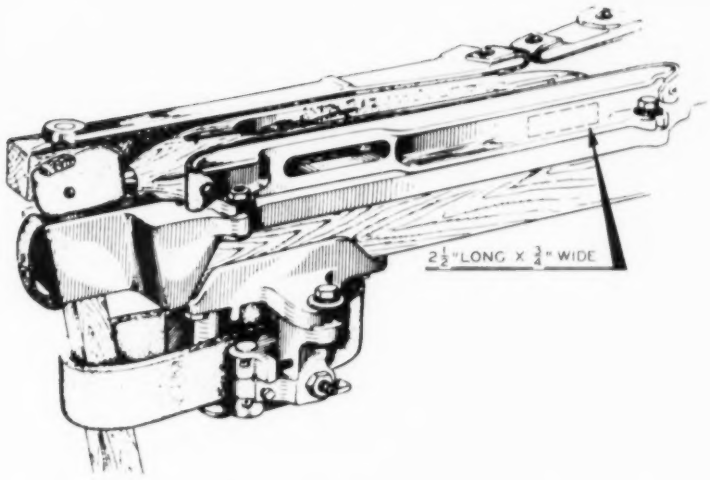
* (U. S. PATENT NOS. 2,516,632; 2,516,633; 2,516,634)

HOW OTHER MEN MANAGE

Put patch on binder to prevent filling kinking



EDITOR TEXTILE INDUSTRIES:

Here is a method we have found effective for preventing kinky filling:

Remove the front box plate of the loom and glue a strip of slasher blanket 2½" long by ¾" wide, 1" behind where the shuttle eye would be when the shuttle is boxed.

The piece of slasher blanket will hold the filling and prevent it from kinking.

CONTRIBUTOR NO. 8832

One way to prevent press-offs in knitting

EDITOR TEXTILE INDUSTRIES:

The knots left in knitting yarn, after the small cones have been replaced with full ones, will pick up lint, slubs, or pieces of tangled yarn which may be in the stop motions or in the eyelets, and carry the foreign matter to the eye in the guide. There it will hang and cause a press-off.

One way to avoid this is to turn the machine over by hand until the knots all clear the last hole in the guide. In this way it is possible to see whatever the knot picks up in time to correct for the condition.

CONTRIBUTOR NO. 8945

Making core yarns on woolen system? Here's help

EDITOR TEXTILE INDUSTRIES:

Here is a formula we use for determining the roving weight required from the wool card when a core yarn is combined with this roving during the spinning operation. This gives the weight of 30 yards of roving.

$$1.\ \text{Drafted roving count} = \frac{\text{Core yarn count} \times \text{combined yarn count}}{\text{Core yarn count} - \text{combined yarn count}}$$

$$2.\ \text{Roving count off card} = \text{Drafted roving count} \times \frac{100}{\%\ \text{Draft} + 100}$$

$$3.\ \text{Roving weight off card (30 yards)} = \frac{7000}{\text{Roving count} \times 28}$$

CONTRIBUTOR NO. 8790

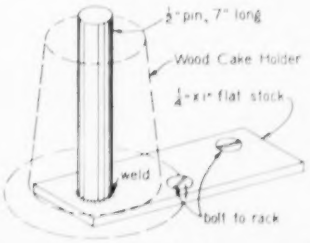
Increase quiller output

EDITOR TEXTILE INDUSTRIES:

Sometimes when quilling from cakes a package needs a little preparation before it is ready to wind. We formerly had our quiller tenders put the cakes on the winders as they needed them, and whenever they came to a bad cake they lost some spindle time as they made the cake ready for the quiller. We were using the cardboard insert.

We changed the routine to allow the operatives to make a cake ready before it was needed on the quiller. The new procedure saves a great amount of lost spindle time.

In order to provide the necessary work space and equipment for making ready the cakes, we welded a ½" pin seven inches long to a piece of ¼" x 1" (see illustration)

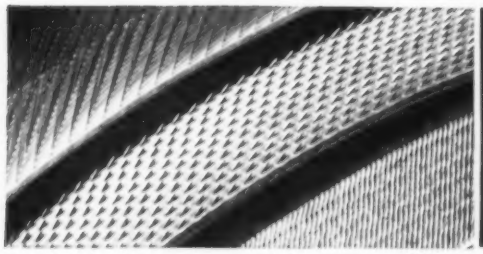


flat stock and bolted the unit to the quill rack. Over the ½" pin we inserted a wooded cake holder (with ¾" hole) to receive the cake.

In the photo the quiller operative

has just placed a cake preparatory to getting it ready for the quiller.

CONTRIBUTOR NO. 8905



CARDER'S CORNER by Ashworth

CARDERS!! The purpose of this page is to serve as an open forum each month. If you have problems which you would like to throw open for discussion or if you have further comments on problems already presented, write to CARDER'S CORNER, ASHWORTH BROS., INC., Fall River, Mass.

Volume 1 Number 2

MORE ON "SNOWBALLING"

"I would like to add my opinions to those quoted on snowballing at the cards in your January 1957 issue." Mill #2

During my carding experience I have found that several things cause snowballs:

(1) Uneven selvages on the picker laps. These can be caused by lumps of cotton caught on the edges of the picker screens. The lumps will cause the cotton to drag enough to pluck at the selvages and cause thin places.

(2) Gummed selvage guides on the cards. This condition will cause the cotton to drag and damage the selvages. Gum on the edge of the feed plate will cause similar damage to the lap. These two conditions can easily be corrected by cleaning the gum from those two points.

(3) Hooked licker-in wire will hold the staple under the bent teeth and release it in small bunches. Oil on the ends of the licker-in will, when present in excessive amounts, cause a similar action.

(4) Spongy wire at the ends of the flats caused by prolonged exposure to oil. A similar condition of broken down clothing exists when the cylinder bearing becomes overheated and expands the cylinder until the flats and cylinder wires are faced at the selvages.

(5) Dirty or gummed licker-in screens retarding the stock as it passes through the licker-in.

(6) Gummed or dirty plates on the back and front. The natural oil in cotton will cause the plates to gum if they are not cleaned often enough.

(7) Broken down clothing foundation which will not support the wire, under the grinding drum or traverse grinder. This condition will not permit the wires to be sharpened on the points. The foundation supports the wire just enough to allow the points to become hooked. Naturally the hooked condition will not permit the stock to transfer from cylinder to doffer to comb properly.

Snowballing is not permanent on any of our cards, as there is always a prompt way to stop that condition by taking immediate corrective action. A clean, well set card will not snowball.

ASHWORTH BROS., INC.

American Card Clothing Co. (Woolen Division)

Fall River*†‡ Philadelphia*†‡ Atlanta†‡
Greenville*†‡ Charlotte†‡ Dallas†‡ (Textile Supply Co.)
Los Angeles‡ (E. G. Paules)

*Factory †Repair Shop ‡Sales Office

3 Factories • 6 Repair Shops • 7 Sales Offices

PRODUCTS AND SERVICES

Clothing for Cotton, Wool, Worsted, Silk, Synthetic Fibre and Asbestos cards and for All Types of Napping Machinery. Brusher Clothing and Card Clothing for Special Purposes. Lickerin Wire and Garnet Wire. Sole Distributors for Platt's Metallic Wire. Lickerins and Topflats Reclothed.

Ashworth PIONEERS IN CARD CLOTHING

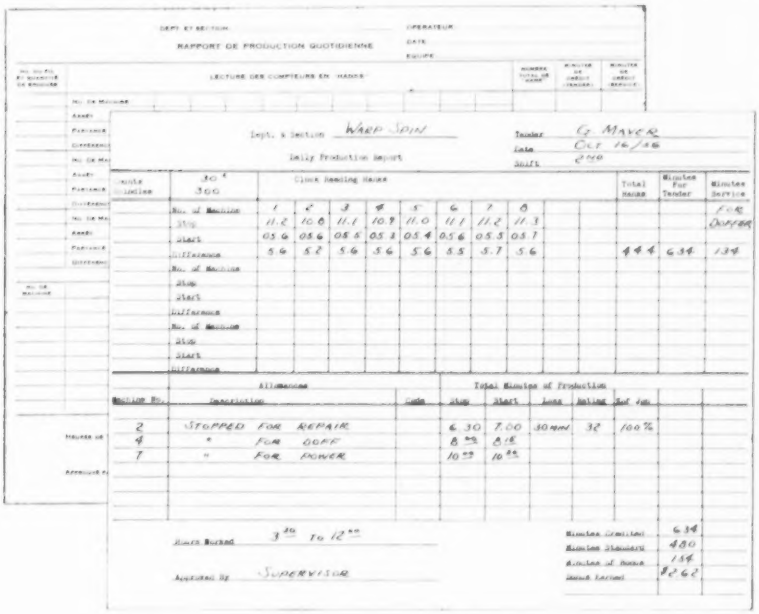
3 FACTORIES • • • 6 REPAIR SHOPS • • • 7 SALES OFFICES

HOW OTHER MEN MANAGE

Try this incentive system in carding and spinning

EDITOR TEXTILE INDUSTRIES:

The accompanying form is the basis of our bonus plan, and although the system is used in both our spinning and card rooms, the form treats only the spinning room situation. I have taken the liberty of translating the form headings from French to English.



RAPPORT DE PRODUCTION QUOTIDIENNE

Dept. & Section WARP SPIN — Tender G. MAYER — Date OCT 16/56 — Shift 2nd

Daily Production Report

Machine Number	Clock Reading Hours 3:00	1	2	3	4	5	6	7	8	Total Hanks	Minutes For Tender	Minutes Service
No. of Machine												FOR
Style		11.2	10.8	11.1	10.9	11.0	11.1	11.2	11.3			DOFFER
Start		05.6	05.6	05.5	05.5	05.4	05.6	05.5	05.7			
Difference		5.6	5.2	5.6	5.6	5.6	5.5	5.7	5.6	444	634	134
No. of Machine												
Style												
Start												
Difference												
No. of Machine												
Style												
Start												
Difference												

Allowances

Machine No.	Description	Code	Total Minutes of Production Stop	Start	Loss	Rating	Eff. %
2	STOPPED FOR REPAIR		6.30	7.00	30 min	32	100%
4	" FOR DOFF		8.[illegible]	8.18			
7	" FOR POWER		10.[illegible]	10.[illegible]			

Hours Worked 3.30 TO 12.00

Approved By SUPERVISOR

Minutes Credited	634
Minutes Standard	480
Minutes of Bonus	154
Bonus Earned	$2.62

The report is filled in by the spinner as she reads the hanks at the end of the shift. After the shift change the forms are picked up and sent to the office where the total hanks are multiplied by the standard minutes allowed per hank. The result is the total minutes earned per eight hours. By multiplying the total minutes earned per eight hours by the rate per minute, the pay, including bonus, is found for the eight-hour period.

The pay for roving frame operatives in the card room is calculated in the same way. There, of course, the rate per minute is different.

The form also reflects the spinning doffer's earnings—he marks down the doffing progress by frame number and time of doff.

To stimulate interest among the doffers and the spinners, the office clerk prepares a daily summary sheet reflecting daily production. This sheet is posted in a conspicuous place where it can be read by all. We find that such posting creates a measure of ambition within the group.

I like the plan because the supervisor is not doing all the work.

I have seen other bonus plans in other mills, but none had a form such as this. With its use, the supervisor can go home with the other employees at 3:30 pm. The production of 175 frames is handled just that easily.

All frame stoppages of any kind are marked to allow us to correct any inequities which might be caused by excessive down time. Such stoppage as is brought on by frame repair, scouring, power failure, etc., is considered beyond the control of the spinner, and she is paid for the lost production. All stoppage must first be approved by the supervisor, however.

In our spooler room we have a standard of so many minutes per cheese. Spooler operatives consequently are paid by the same system used in paying our spinners.

With us a job rated at 100% should reflect 130% efficiency. A spinner with 16 sides, producing 44.4 hanks per eight hours, with a standard 14.20 minutes per hank allowed, and paid at the rate of $0.015 per minute, would earn as follows:

44.4 × 14.20 = 630 minutes
630 × $0.015 = $9.45 for eight hours
630 ÷ 480 × 100 = 131%, or 31 rating

The forms, to simplify identification, are printed in three colors:

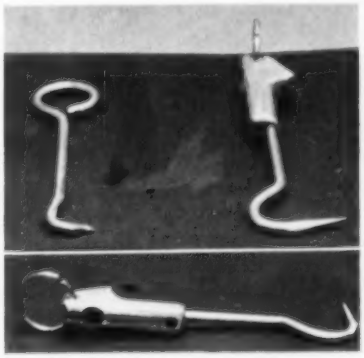
First shift—blue
Second shift—green
Third shift—pink

CONTRIBUTOR No. 8950
(*Canada*)

Reclaim spinner's hooks

EDITOR TEXTILE INDUSTRIES:

By using this device as a handle, a wornout spinner's hook can be cut in two and each piece used again. The handle is made from a

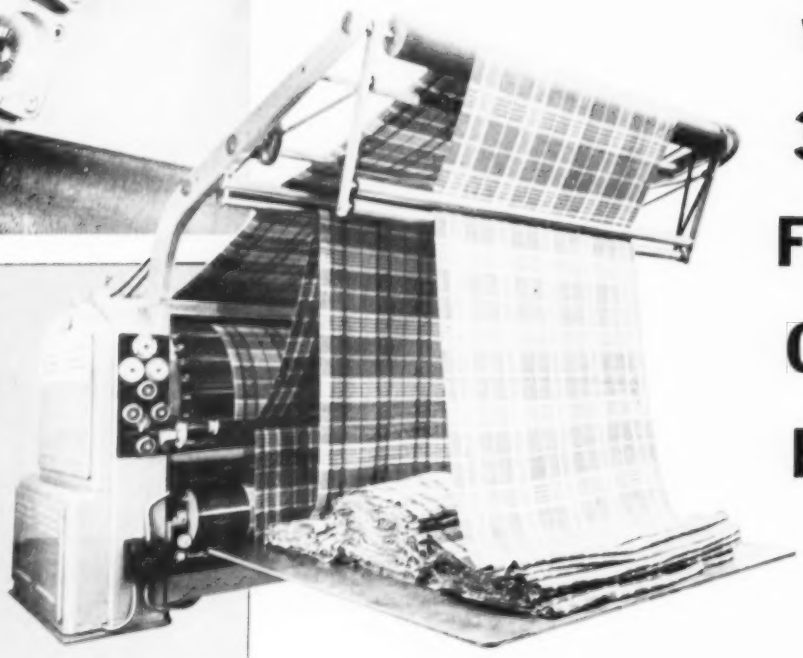


Saco-Lowell cap bar and a ring from a weaving quill.

We have been using them for several months, and because of the nature of the handle, our spinners like them very much.

CONTRIBUTOR No. 8949
(*Canada*)

MONFORTS RZ Napper Gives a Better Finish with 30% Fewer Cloth Runs



A considerable number of American mills are already using RZ Nappers. These, without exception, report that the positively controlled and synchronized speeds of the napping rollers produce the finest finish on the market on all types and qualities of cloth. They also report great savings in machine time and in labor due to the RZ Napper's high speed (45 yds. per minute) and the fewer cloth runs required.

Many other exclusive features make the Monforts RZ the most versatile napper in the world. One of these, shown above, permits removal of each napping roll in two minutes — ¼th to ⅛th the time required on any other equipment — without disturbing the journals, bearings, or gears in the machine. Let us give you full information.

Other Monforts Machines:

- **Shearing and Cropping Machines**
- **2 and 4 Roll Padders for Moisture Extraction, Impregnating, and Dyeing**
- **Tenter Frames**
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- **All Types of Cloth Room Machines for Measuring, Doubling, Rolling, and Folding**

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COCKER Machine and Foundry Co., Gastonia, N. C.

Monforts Agencies:

Northeastern USA—Texplant Corp., 695 Summer St., Stamford, Conn.
Canada—Crowther Limited, 212-14 Victoria Ave., Montreal 6, Que.

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Explore the advantages of new DISPERSCON† Powders

Latest addition to the AMANTHRENE* Vats

AMANTHRENE Vat Colors are now augmented by *new, highly concentrated* DISPERSCON Vat Powders. Easy-to-use . . . rapid-wetting . . . non-dusting. In paste or powder form, AMANTHRENES offer **excellent washability** and light fastness. Ideal for package machine and beam dyeing of cotton and rayon dress fabrics, sportswear, socks and shirtings. For details on the AMANTHRENE range, including new DISPERSCONS, write or call your A.A.P. representative at our nearest branch.

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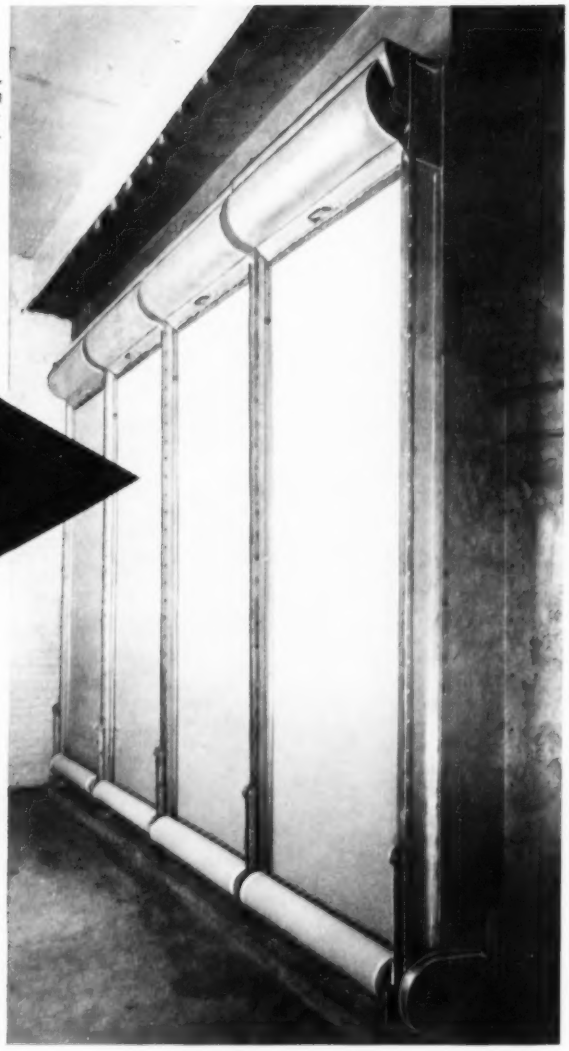
A UNIT OF KOPPERS CO., INC.

50 Union Square, New York 3, N. Y. • Plant: Lock Haven, Pa. **BRANCHES:** Providence, R. I. • Philadelphia, Pa. • Paterson, N. J. • Chicago, Ill. Charlotte, N. C. • Chattanooga, Tenn. • Columbus, Ga. • Los Angeles, Cal. **Dominion Anilines & Chemicals, Ltd.**, Toronto, Canada • Montreal, Canada.

Auto-AIRMAT installation at Riverdale Mills, Enoree, South Carolina. Air conditioning system designed and installed by Buensod-Stacey, Inc., Charlotte, North Carolina.



CURTAIN GOING DOWN ...ON *LINT!*

AAF Auto-AIRMAT filters end lint problems for Riverdale Mills

Lint—the relentless enemy of textile operations—doesn't have a chance to do its dirty work at Riverdale Mills, Enoree, S. C. AAF Auto-AIRMAT filters on eight air conditioning systems (totaling 569,365 cfm) keep lint safely behind the "paper curtain".

The Auto-AIRMAT is the *only* filter designed specifically for lint. Airmat filtering material, unwinding from roll at top of unit, moves automatically down the face of the filter, collecting lint all the way—rewinds into easily-disposable roll at bottom.

If you've got a lint problem, investigate the *lint filter*—AAF's automatically renewing Auto-AIRMAT. Call your local AAF representative, or write direct for Bulletin 234.

AAF herman nelson

American Air Filter
COMPANY, INC.

215 Central Avenue, Louisville 8, Kentucky
American Air Filter of Canada, Ltd., Montreal, P. Q.

Herman Nelson Unit Blowers

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BETTER AIR IS OUR BUSINESS

Illinois Heating Specialties

Air Filters and Precipitators

Set knitting take-up motions with care

EDITOR TEXTILE INDUSTRIES:

Here is a word of caution to knitting machine operatives, especially to beginners: The take-up motion of a machine can damage a world of cloth if improperly adjusted.

It is especially hard to set to take up slippery cloths. These fabrics are so difficult to hold that often the take-up rolls are tightened until the rolls cut little holes in the fabric. Some of the holes will not show up until the cloth is through or in the finishing operations.

A little slip is best. If the rolls do not permit a measure of slip, the chances are that a few holes will show up in the finished fabric.

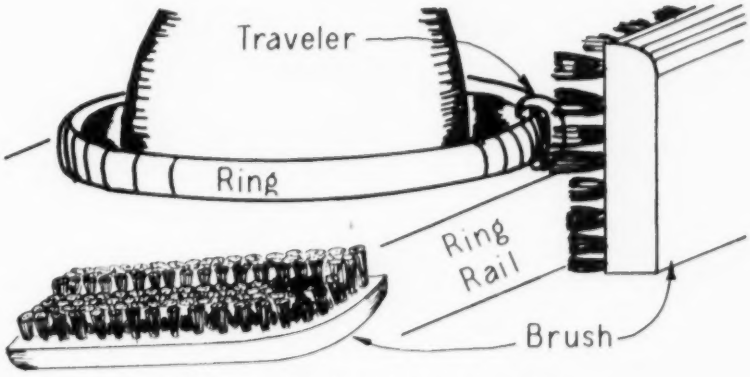
CONTRIBUTOR No. 8953

Brush cleans travelers on running frame

EDITOR TEXTILE INDUSTRIES:

One of the greatest problems in the spinning room today is the loading of travelers. We have tried all styles of traveler pins and settings, but so far have not found one that cleans the traveler satisfactorily.

For some time now, where I find this condition, I have been using a thread guide brush such as spinners use to clean the thread guide board on spinning frames. This brush has nine rows of bristles: the bristles on one side of the brush are longer than those on the other.



To use, just run the brush down the ring rail, holding the bristles close to the traveler while the frame is running.

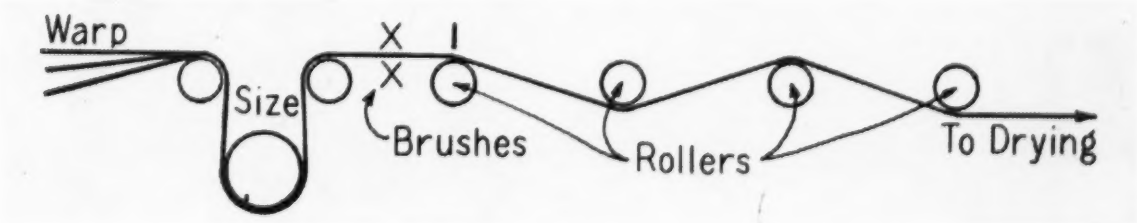
CONTRIBUTOR No. 8928

Remove center reed to up slasher output

EDITOR TEXTILE INDUSTRIES:

We have cut out the center reed in our slashing machines and increased efficiency from 45% to nearly 60%. This avoids time in replacement of reed and threading warp ends. Where heavy warps—jute and cotton—are brushed, time is saved in negotiating new sets through the brush.

Our idea, to keep an even spread of warp, is simply to lead the ends over and under rollers at a slight angle. In brushed warps (of which we have a large variety) the rollers before and after brushing are as near together as possible. A top roller, say 2′ 6″ distance, according to trial, depresses the warp slightly, and a following roller under the warp lifts it. These alternate rollers continue to the drying chamber (or steam cylinders). The breaking of the straight warp line prevents rolling of ends and bunching. A "half-way" lease rod is inserted between brush and rod (1) in the illustration.

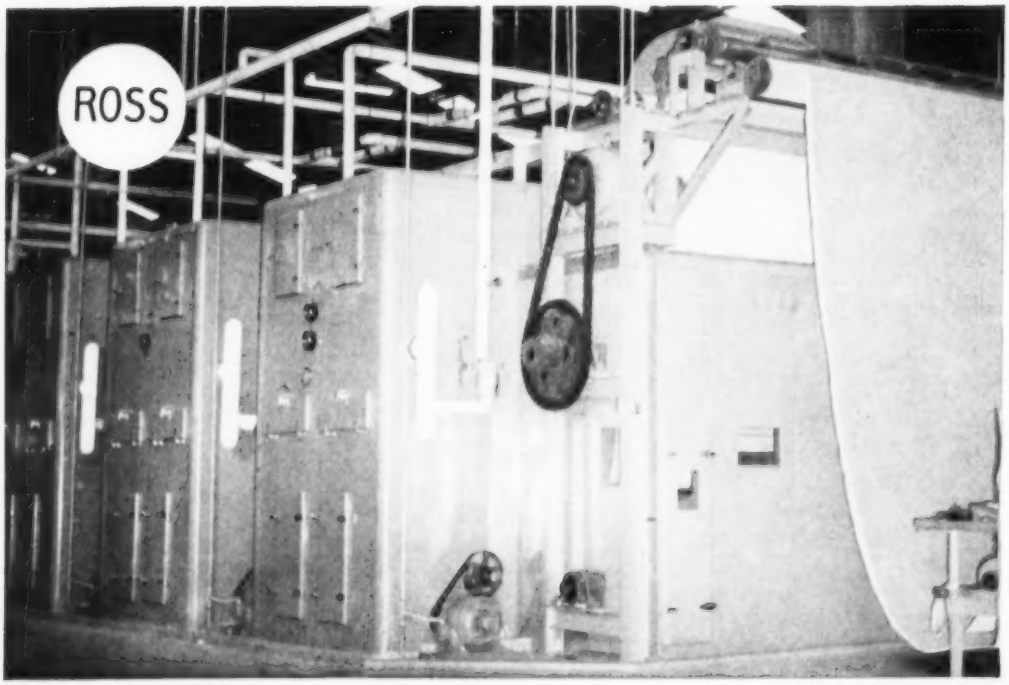


CONTRIBUTOR No. 8924
(England)

ROSS Air Systems

COMBINING · · ·

A&G dryers



..2 ENGINEERING SKILLS

In the Important Field of Drying

Last December, Andrews & Goodrich, with manufacturing facilities in Boston, became a division of the broadening J. O. Ross Engineering Corporation of New York.

Both Andrews & Goodrich and Ross Engineering have had years of experience in the design and manufacture of dryers. The services offered by Andrews & Goodrich engineers, who since 1920 have specialized in drying problems in connection with textile finishing, are now augmented by the broad experience in industrial drying available through Ross Engineers.

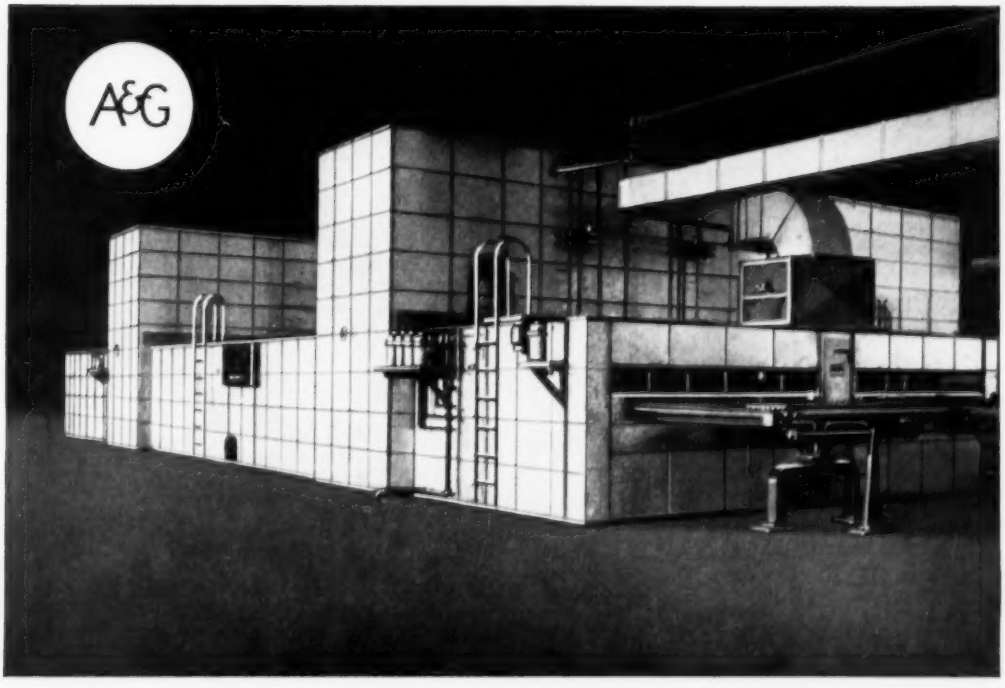
Each company will maintain its present sales and engineers organizations and field representatives but each will assist the other. These complementing services should be very helpful to textile finishers in connection with their drying problems.

Please address all inquiries to:
ANDREWS and GOODRICH DIV.
J. O. ROSS ENGINEERING CORP.
336 Adams Street
BOSTON (Dorchester), MASS.

ANDREWS and GOODRICH DIV.
BOSTON (Dorchester), MASS.

J. O. ROSS ENGINEERING CORPORATION
NEW YORK, N. Y.

Southern Representatives: McSpadden & Scantland, Charlotte, N. C.



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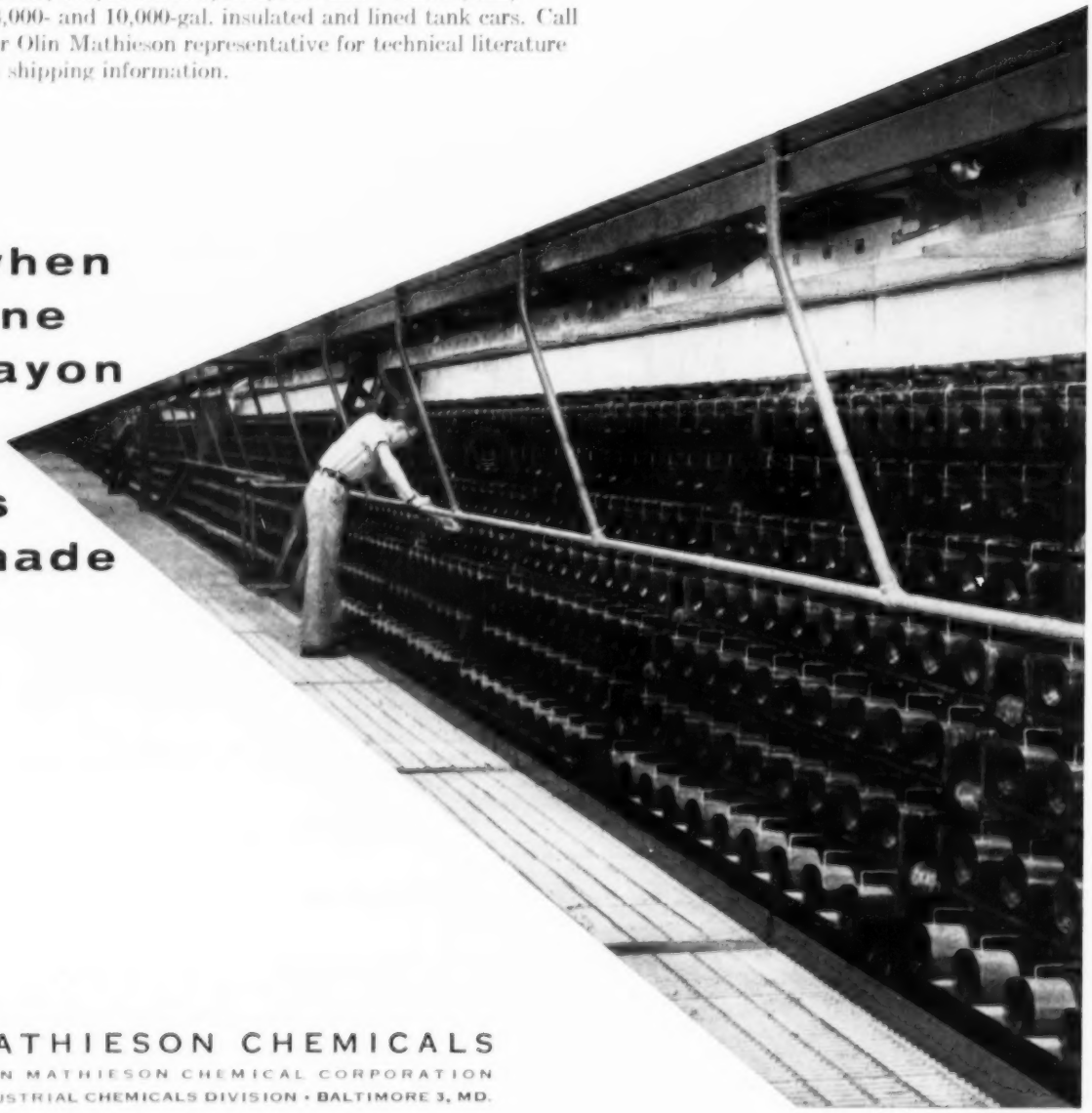
when fine rayon is made



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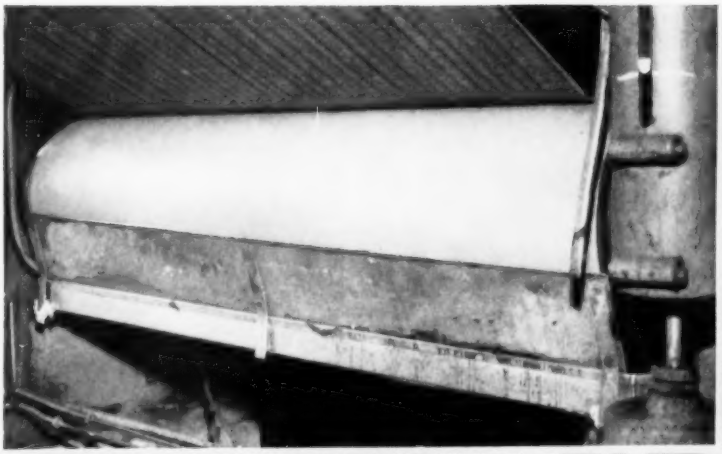
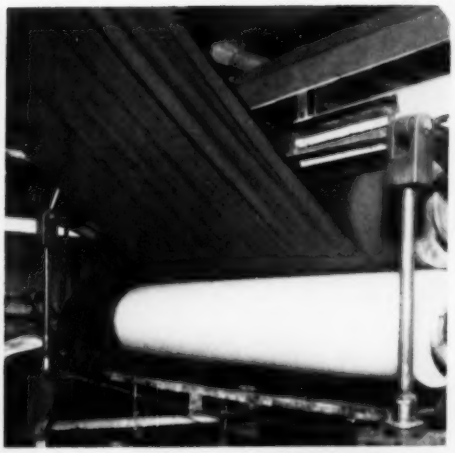
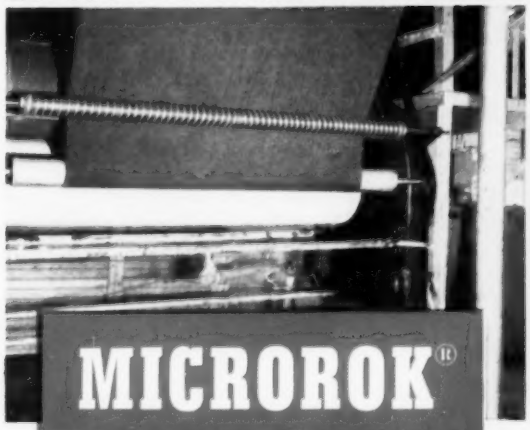
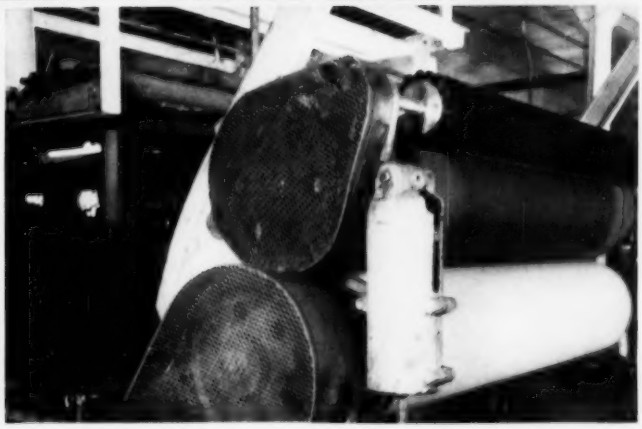








MICROROK®

...cuts bottom roll maintenance

Frequently, the cost of removing bottom squeeze rolls exceeds the cost of their grinding or recovering. Loss of production and, in some cases, the expense of hiring riggers to handle these heavy, hard-to-get-at rolls, are profit-stealing problems.

Microrok is compounded and built to last longer. The first Microrok roll installed in a textile mill has been in continuous operation for over four years. Removed from its carbonizer unit for inspection only once two years ago, it showed less than .001" loss of crown. It was reinstalled and has been running continuously since.

Other Microrok rolls are being used as padder, mangle, squeeze and washer rolls, with equally successful results.

Ask your Stowe-Woodward Sales Engineer about Microrok, or write today for your copy of "MICROROK — the miracle roll covering," Bulletin 501.

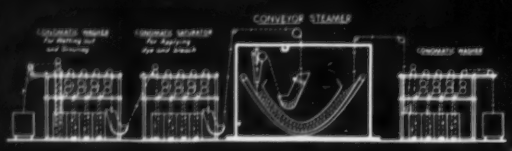
"RUBBER ROLLS with a REPUTATION"

S-W INC.

STOWE-WOODWARD, Inc.

Craftsmen in rubber rolls

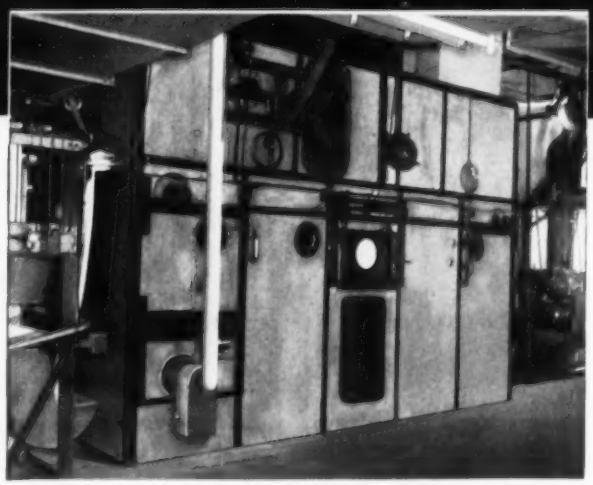
NEENAH, WISCONSIN • NEWTON 64, MASS. • GRIFFIN, GEORGIA



Installation View of
Con-o-matic Washer in
Continuous Bleach Range.

For improved quality of knit goods and profit making production . . . install a

PROCTOR CONTINUOUS BLEACH RANGE



Installation View of Steamer Unit in Continuous Bleach Range.

This range has been field proven, and is now producing highest quality tubular knits at the P. H. Hanes Knitting Co., in Winston-Salem, N. C. Through the use of a Con-o-matic Saturator, this range is adaptable to be used in applying fluorescent dye, which is one of the latest techniques of the knit goods industry.

Discuss the possibilities of adding a Proctor Con-o-matic washer to your present production set-up. The tapered squeeze rolls (Pat. app. for) assure a continuous trouble-free, tension-free operation.

Proctor engineers will be glad to discuss your knit goods problem with you at your earliest convenience. Why not present your problem to men who can help you.

Proctor

WRITE FOR DETAILS—PROCTOR & SCHWARTZ EQUIPMENT FOR THE TEXTILE FIELD

AUTOMATIC BLENDING SYSTEMS • WEIGHING FEEDS • PICKERS • SHREDDERS • BALE BREAKERS • SYNTHETIC CARDS • GARNETTS • DRYERS FOR FIBROUS MATERIAL • YARN DRYERS • HOT AIR SLASHER DRYERS • CLOTH CARBONIZERS • ROLLER DRYERS AND CURERS • LOOP AGERS FOR PRINT GOODS • TENTER HOUSINGS • OPEN-WIDTH BLEACH SYSTEMS FOR WOVEN FABRICS • MULTIPASS AIRLAY DRYERS • NYLON SETTING EQUIPMENT • CON-O-MATIC WASHERS • CONTINUOUS BLEACH SYSTEMS FOR PRODUCING TUBULAR KNITS EQUIPMENT FOR "SESMANIZED" SHRUNK-TO-FIT FABRICS • CARPET DRYERS

PROCTOR & SCHWARTZ, Inc.

Manufacturers of Textile Machinery and Industrial Drying Equipment. Philadelphia 20, Pa.

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VIBRATOL gives hosiery sales stimulating eye appeal . . . it keeps customers satisfied with their purchase . . . it helps you reduce rejects.

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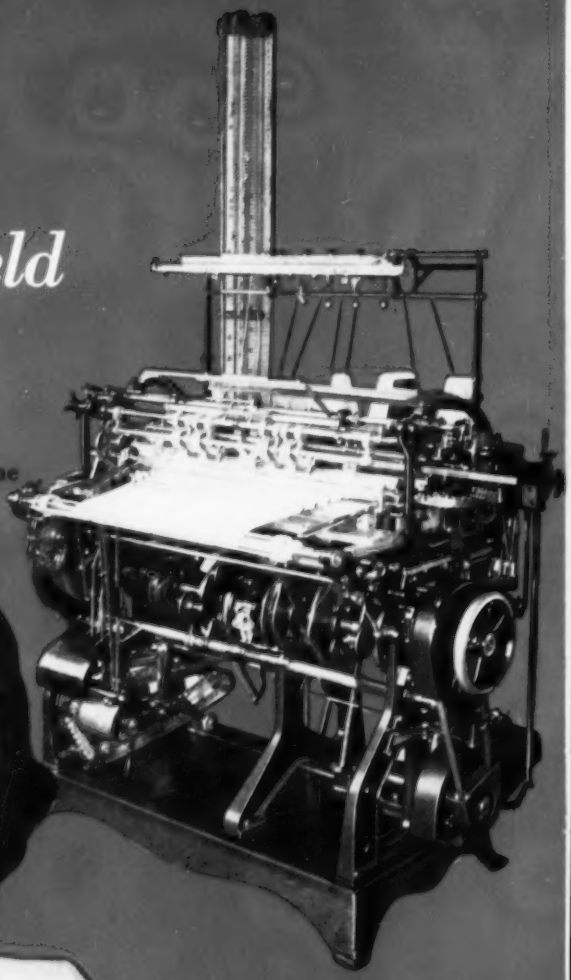
A FIRST in the FULL FASHION Field ... TFS



The Wildman Jacquard TFS is a versatile knitting machine which offers increased production, quality fabrics, lower knitting costs, style versatility and simplified design.
These features plus other mechanical improvements incorporated in the TFS permit the production of a variety of full fashioned outerwear in a range of natural or synthetic fibers.

For complete information, write:

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Single Section — TFS

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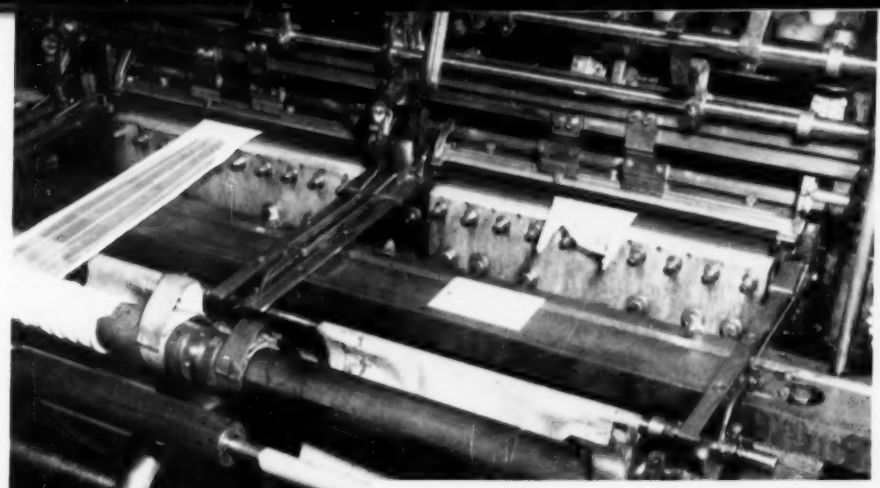
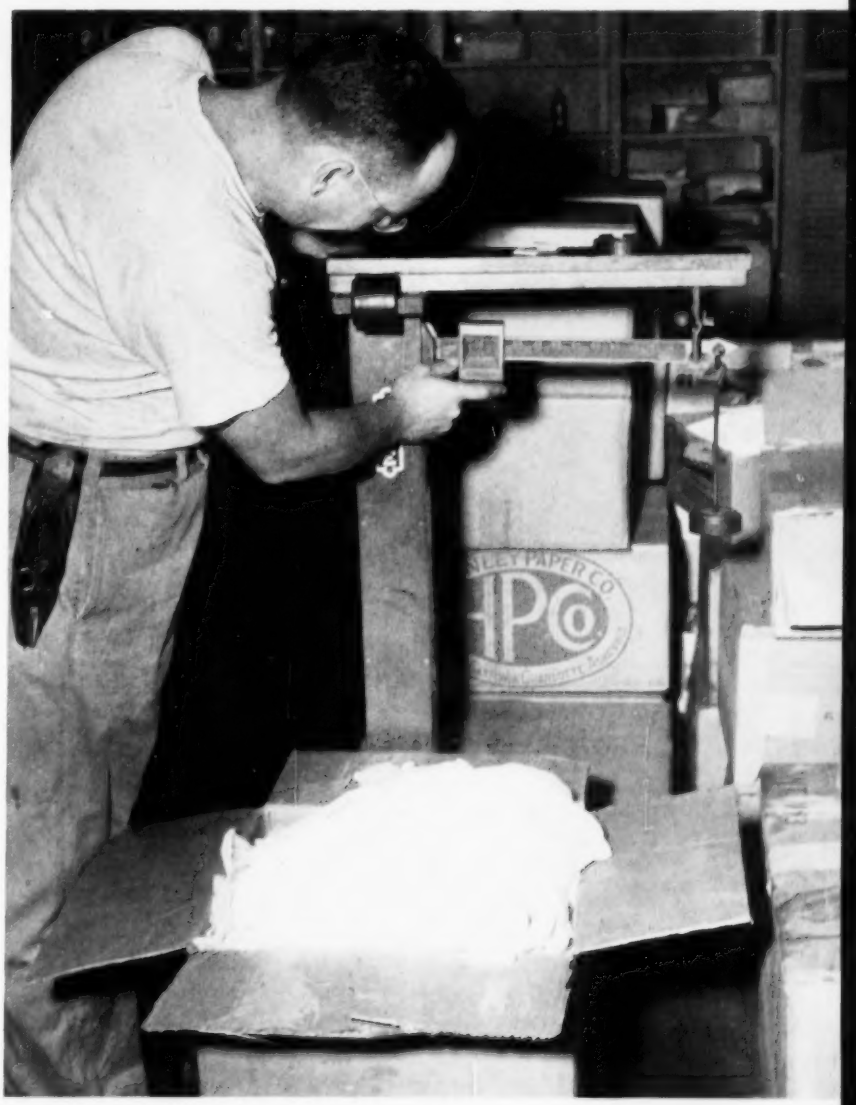
... Leading manufacturers of quality knitting machinery



Bad work is made when operators fail to drop out sections . . .

. . . the result is excess waste.



Some waste in a full-fashioned mill is unavoidable, but

High waste = low profits

by R. D. Brackett
Exclusive

IT IS impossible to operate a knitting department without having waste. It is possible to operate without unnecessary waste. Waste made in the normal operation of a well supervised and efficiently run mill is negligible, and amounts to very little in the over-all operation of the plant.

On the other hand, waste which could have been avoided can put a company in the red about as quickly as any phase of the business operation. To make matters worse is the fact that a very large percentage of unnecessary waste is due to negligence on the part of management and supervision.

Nine out of ten operators of full-fashioned machines will not drop a section out, even if the stocking is bad at the beginning of the welt, so long as they know that nothing will be done or said about it. Even in plants where they are supposedly required to drop the section out immediately upon detecting a bad stocking, they don't do it.

In many cases the supervisor or even the manager will walk by and see these things but with something else on his mind he thinks he is too busy to bother

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Please contact us so that we can show you how one and the same Reiner 21 gauge machine can knit many patterns of bulky-type sweaters—or plain jersey—with or without self ribs of high elasticity.

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Take Bus Nos. 61 or 67, from Platform No. 60, Port Authority Bus Terminal, 41st Street and 8th Avenue, New York City. Get off at Pleasant Avenue, Weehawken, New Jersey. From there turn left and walk through the underpass up to Gregory Avenue . . . TELEPHONE: UNION 7-0502, 0503, 0504, and 0505. From New York City call LONGACRE 4-6882.

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Waste is increased, profit margin narrowed by removing cones prematurely.

Another way to increase waste and cut profits is to classify good yarn as bad.

When an operative is found violating a rule, have a friendly talk with him in private. Explain why the rule was made, and that violations hurt everyone — employee and employer.

with it and keeps going. This is a bad situation. When conditions get to the point that the supervisors have to go around again and instruct each operator to drop out the sections where there are bad stockings, the operators joke about it among themselves. They know that it will just be a matter of a few days until the "heat" will be off — and here we go again. This happens time and time again in a majority of the plants.

Now this is only one case of negligence on the part of management. There are many, many others that turn profit into loss—yarn taken off before it has been run down to a minimum on the cone; yarn that is taken off and marked as bad but is not; heads that are allowed to run for days making the same defect over and over; operators being away from the machine, allowing yarn to run out or sets to be lost. These are just a few of the many other cases that contribute to unnecessary waste and can be traced back to negligence on the part of management and supervision.

To control waste and keep it to the absolute minimum requires a waste control program with rules that are strictly enforced at all times. Every time a supervisor passes a machine he must constantly be on the alert for violations of these rules, and must never under any circumstances pass one by.

Now this does not mean a "get-tough" policy that will keep the operators on edge and in fear of their jobs and security. If it is worked right it will have just the opposite effect. Once an operator is detected deliberately violating a specific rule it should be called to his attention at once. Have a friendly talk with him, in private, and explain to him why the rule was made and the importance of cutting down waste. Explain to him that it is not only for the company's best interest that these rules were made but that they are for his and all other employees' benefit and security as well.

Do your best to get him to see it from your point of view and then make it perfectly clear that any further violations of these rules will not be tolerated. Chances are that you will not have any more trouble from this operator and he will have a greater respect for you. Of course there will be a few that this procedure will have no effect on at all. They, like a bad tooth, must be eliminated. One bad apple can spoil the barrel.

Following are a few instructions that might prove helpful in waste control:

Drop sections cut where stockings are bad.

Run all yarn down as low as possible.

Never take a cone of yarn off and class it as bad without getting permission from the supervisor, unless it has a visible defect. If the yarn is suspected of being faulty but no defect is visible, it should be put on the head beside the one giving trouble. Then if it is definitely proved that the yarn is bad, get permission from the supervisor to take it off.

One operator should be with the machines at all times.

If a section is making a defect

Guardians of Knitwear Quality

Whether they're tots or teen-agers, protection comes first. In knitwear, too, the guardians of extra quality are Arrow Latch Needles, Flat Stock and Leaded Assemblies. Precision-built by Textile and backed by a half-century of industry service, Arrow Latch Needles are your assurance of free latch movement, a strong latch, and a mirror-smooth finish. That means true alignment, even stitches, and less down-time . . . for extra production and higher quality. Prompt delivery from stock in Reading, Pa., Asheboro, N. C., and Manchester, N. H.

Arrow LATCH NEEDLES

Nearly every competitive advantage starts with the machine

Wire Products Division
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and the operator can not eliminate the trouble within two or three sets he should report it to the supervisor at once.

Weigh the waste from each machine each week and keep a record of it. If one machine makes an excessive amount of waste this waste should be inspected so that the cause may be determined and eliminated.

Make every effort to prevent the goods from being damaged by handling from the time they are being knitted until they leave the plant.

Should a machine be broken down or the style changed, a fixer should stay with it until it is back in production and running properly. Too often a machine is turned over to the operator to straighten out and results in a waste of yarn, loss of production, and a waste of needles and other materials, not to mention the wages that are being paid for this.

Each operator should inspect his work as closely as possible. The supervisor should spot check the bad work returned to the operators and see what is wrong with that work. If an operator has several stockings sent back from the same section with the same defect that should have been easily detected by proper inspection, then he should be reprimanded.

Last and most important, the supervisors must be impressed with the importance of always being on the alert and never letting up. If one supervisor lets up or gets slack in enforcing the rules you will get it thrown back in your teeth when you have to discipline someone from another shift. The most embarrassing position you can get into is for an operator to ask you why something is permitted on one shift and not on another. All rules must apply to and be strictly enforced on all shifts and all cases of violation handled as nearly alike as possible.

Now, many managers and supervisors will say that this program is not practical today. They are having too much trouble getting and holding operators. Look at it this way—if your waste is down, your production is good, and your bad work percentage is at a minimum, then you have a good job to offer to an operator and you can pay as good a wage as the average.

Good knitting jobs are scarce. It is the jobs where waste and bad work are too high and production is too low that are plentiful. Once an operator gets in a plant where he knows that he can run good work and get good wages, he will think twice before he leaves. A good operator wants to work in a well supervised plant because he has a better feeling of security. If he does not have this feeling of security you can bet your boots that he is "looking" and it won't be long until he is gone.

Then too, if you can not get operators who are willing to be supervised and help you to run your plant at a profit then you had better close shop before you lose your shirt.

Tips for knitting Creslan acrylic fiber yarns

■ BOTH HIGH loft and regular yarns spun from Creslan, American Cyanamid Company's acrylonitrile fiber which is now being produced in limited commercial quantities, can be knitted on all types of machines designed for spun yarns, according to information recently released by the fiber producer.

Satisfactory knitting has been experienced over a wide range of temperatures and humidities. For best knitting, a room humidity of 50-60 per cent at a temperature of 50-60 F is indicated.

Trade practices for fabricating garments from acrylic knit goods are said to be applicable to knit fabrics of Creslan. When garment dyeing is practiced, looping and seaming with the identical yarn as used in the garment body, or yarn from the same lot with higher twist inserted for more strength, is satisfactory . . . either results in a matching color for the sewing yarn and the garment body.

When garments are fabricated after dyeing, matched color threads of mercerized cotton can be used in sewing, according to American Cyanamid.

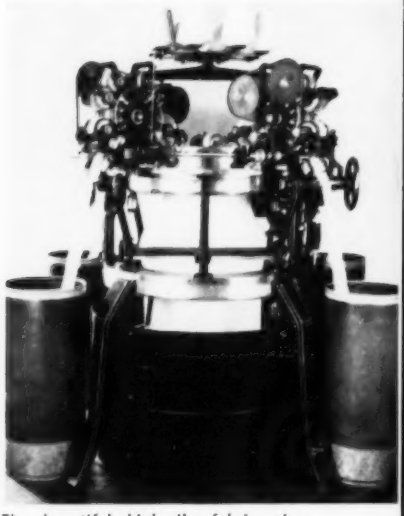
For suggestions on wet processing fabrics of Creslan, see p. 128 of this issue.

Timing controls *(from page 129)*

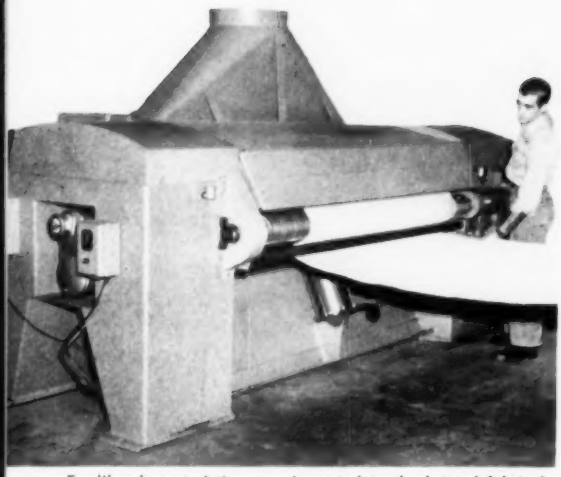
most easily read by the machine's operator.

These tachometers do not have any time lag and therefore provide the machine operator with a constant and instantaneous indication of machine speed. Since their mechanism is unaffected by outside influences such as vibration, moisture, and induced electrical currents, the readings are reliable. They permit coordination of our plant operations to assure an uninterrupted and rapid flow of quality work.

These instruments have so established their value that we are using them in practically every step of our dyeing and finishing operations. (The tachometers we use are manufactured by Jones Motrola Corp.)



The beautiful high-pile fabric pictured here was made on the Wildman FBW4 knitter shown above.



Fur-like characteristics were imparted to the knitted fabric by the Turbo Electro-Finisher shown here. To see how the fabric looked before finishing, look on page 201.

Are you considering making high-pile fabrics, such as the currently popular imitation fur fabrics, floor coverings, outerwear linings, upholstery, and the like? If you are, you should know that some mills are knitting

HIGH-PILE FROM STAPLE

Staff prepared*

SOME manufacturers of pile fabrics are using for this purpose the Wildman FBW4 machine, a standard latch needle circular jersey machine with web holders adapted to knit pile fabric (availability was announced in TEXTILE INDUSTRIES for Feb., 1954, p. 95).

Miniature cards of the woolen system type are fitted to the machine to feed staple to the knitting needles immediately prior to the standard knitting feed. By the use of relative needle and doffer speeds, the staples are bent in "V" formation around each needle and locked in this position by the backing stitch (a standard jersey stitch). The density of the staple around each needle is governed by the weight of the original sliver and the carding mechanism adjustment.

Advantages claimed for pile fabric knitted from staple rather than yarn are: (1) The fiber emitting from the backing material is groups of staple, thereby eliminating the customary rows of tufts existing in knitted loop fabric or woven material; (2) whereas the pile yarns in conventional knitted loop fabric or woven material are only napped on the ends, the tufts or pile of the knitted pile fabric are as dense at the base of the pile as at the outer surface.

Either natural or synthetic fibers or blends of these in lengths ranging from ¾" to 3" are fed to the woolen type cards in sliver form, the fibers having been formed into a sliver weighing from 140 to 200 grains per yard on a standard worsted type carding machine. This sliver should have only enough twist to allow it to be drawn into the carding mechanisms on the knitting machine, as the sliver must be torn apart to deliver the staples uniformly by the knitting machine carding mechanism doffers. This staple must be dyed before being put in sliver form.

Pile fabric machines used by most mills are 23 inches in diameter, have 10 needles per inch and four or six carding mechanisms. Finished width of the fabric is 54". Weight of fabric can vary from 10 to 18 oz per yd to 42 to 44 oz per yd. Production rate is about 5 yd per hr.

One popular imitation fur fabric is made from a sliver containing 67% Orlon of 3 denier staple and 33% dynel of 3 or 5 denier staple. Staple length before knitting is 1¾". The backing material is dynel yarn, 2 ends of 15/1.

Another is made from a 245- to 250-grain sliver containing 70% Orlon staple and 30% dynel staple, both 1 9/16" long, and knitted with a dynel backing at 24 stitches per inch. For this type of fabric it is necessary to slow down the feed gears 41 to 15 and maintain an 8:1 doffer speed ratio to the needles.

KNITTING TIPS. For recommended settings to be used on the carding mechanisms, refer to the sketch (on page 201). Settings of the doffer to the main cylinder and the doffer to the needles should be maintained as indicated on the sketch. Check these frequently because they are considered critical.

To keep lumps and marks out of the fabric, the licker-in should be as close to the feed rolls as possible without touching, experience indicates.

The condition of the clothing on the doffer should be closely observed, because there is considerable friction generated between the doffer wire and the knitting machine needles. Replacement interval can be extended by careful selection of doffer clothing. Especially should method of manufacture and diameter of wire be considered.

Air tubes and connections are provided to assist the positioning

*From material secured from engineers of Wildman Jacquard Co. and Turbo Machine Co. during a visit to the plants of these textile machinery builders.

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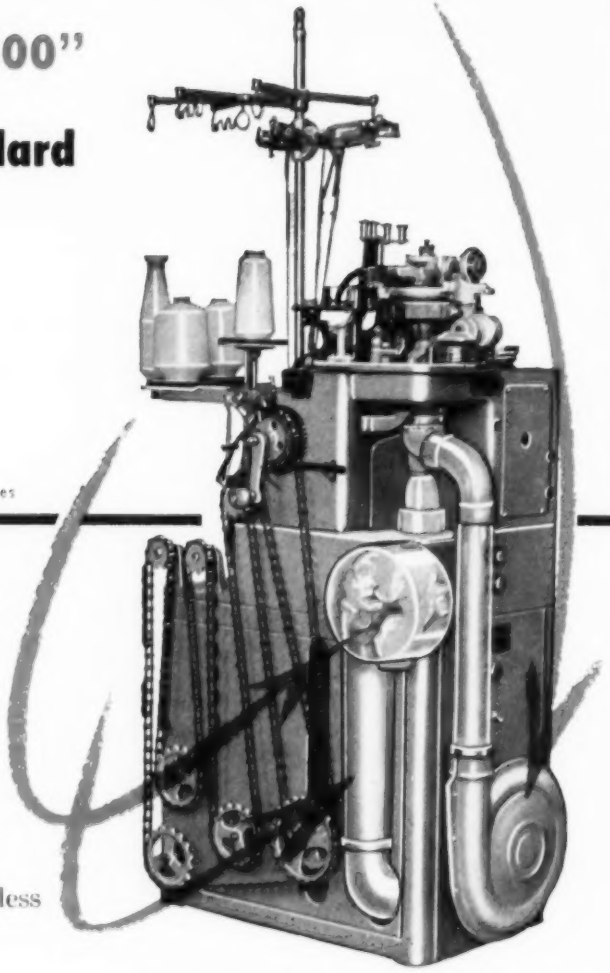
Sets the New Standard

in Seamfree

Stocking Quality!

*Patents Pending in United States and all Foreign Countries



Compare the unique features of the revolutionary new Fidelity Automatic Tension Device:

- Installation *does not* increase machine height!
- Completely air-operated— no mechanical arms or contrivances!
- Uniform tension is maintained regardless of knitting speed!
- Requires no resetting if machine is hand racked!
- Nylon retainer on transparent receptacle assures no-snag removal of stockings!
- Totally self-contained unit—easily installed without auxiliary air inlets!

Compare—then decide to meet the *new* standard of production quality *now*, with the superior new Fidelity Automatic Tension Device . . . designed for use with the electronically controlled Fidelity "400" and other makes of knitting machines. Write today for details . . . or visit our showrooms.

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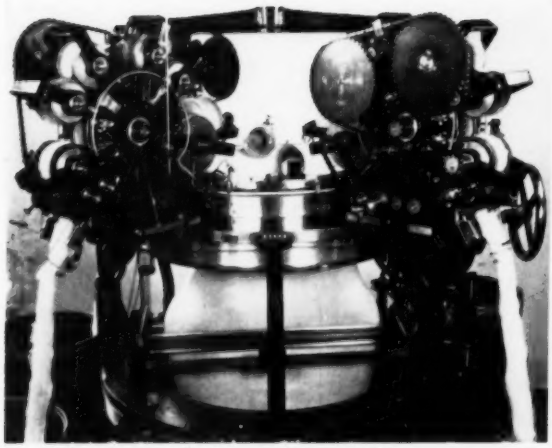
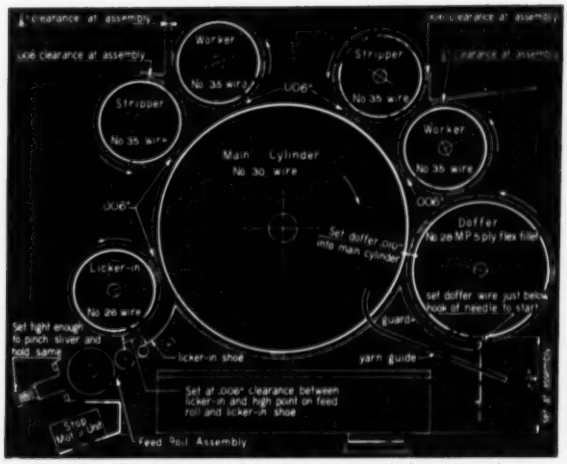




Two of the pile fabric knitting machine's miniature woolen cards are visible in this close-up photo (left). At the right is a cross section sketch of rolls of one card, with recommended settings between the rolls and the main cylinder indicated.

of the fibers at the knitting stations and to help keep the fly and lint from accumulating on the carding machine. The connection is a 3/8" pipe, and it should be supplied with about 20 cu ft per minute of compressed air at a pressure of 8 to 10 psi (gauge). It is important that this pressure be maintained. Should it drop below 8-10 psi, the fibers coming off the doffer roll will not be in proper position for the needles to pick them up and lock them into the fabric.

It is also recommended that air suction be supplied above the center of the knitting machine to carry off excess lint and fly. It is not advisable to permit accumulation of lint that might become positioned to knit in with the pile and backing yarn.

FINISHING. The sequence of finishing operations for pile fabrics made on this knitting machine varies, dependent largely on the end use of the fabric and the type of finish and appearance desired.

Three machines manufactured by Turbo Machine Co. are used in finishing high pile fabrics: (1) the Electro-Finisher which raises the fabric pile and polishes it (described in T.I. for January, 1957, p. 171); (2) the Shearer which may be used for both rough shearing and final shearing; and (3) the Wet Applicator which can apply any type of liquid to the pile of the fabric.

Here is the way these machines are being used to finish successfully the Orlon-dynel imitation fur fabrics described above:

1. Remove fabric from knitting machine in 30- to 40-yard lengths and slit.

2. Put fabric on tenter frame to heat-set back of fabric which is dynel. (Sometimes a coating is applied to the back of the fabric.)

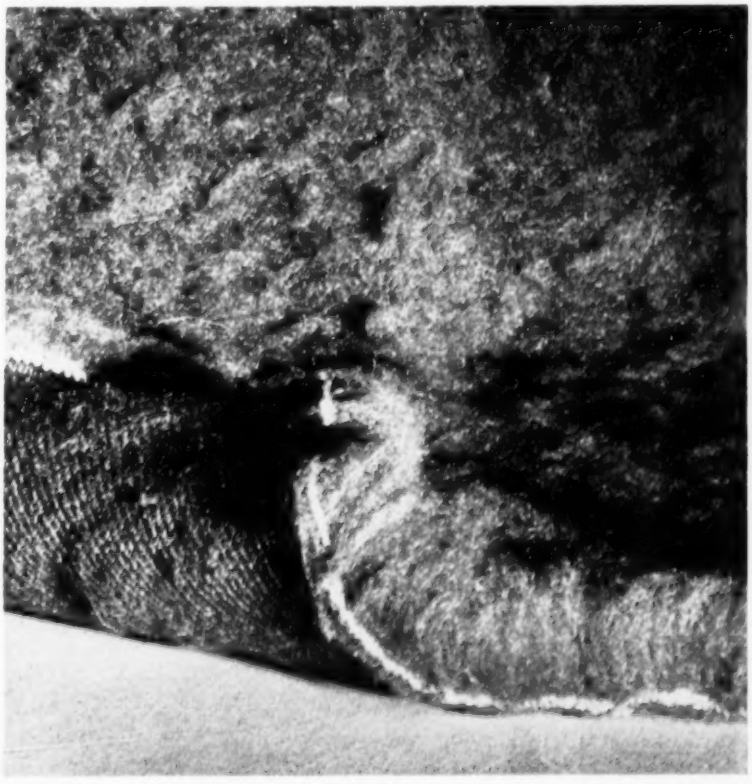
3. Give pile a rough shearing.

Either of the following methods for further processing may be utilized, depending on finish desired:

A. Pass fabric through the Wet Applicator for treatment with a

(Continued on page 203)

High-pile fabric (Orlon-dynel sliver and dynel back) as it comes from the knitting machine.



Hemphill Chooses Franklin Process Colored Yarns

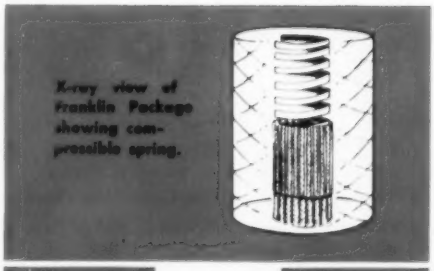
Hemphill Company (Pawtucket, R. I.), manufacturers of famous Banner hosiery knitting machines, believe that the best way to sell their products is to show samples of the hosiery which their machines produce.

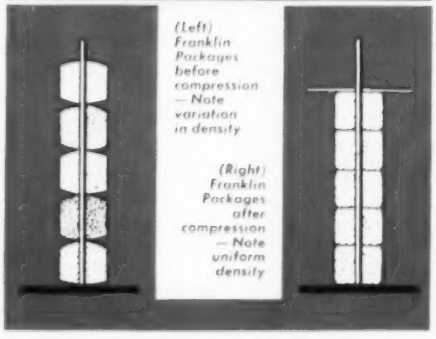
Since they take great pride in the quality of their machines, they naturally want the products of their machines to *express* quality—quality in yarns and quality in colors.

Therefore they use Franklin Process Colored Yarns in their samples and here's what they get:

1. **SMOOTH RUNNING YARNS** — specially made for knitting and properly conditioned and wound to deliver without excessive breakage or nipping.
2. **EVEN, BRILLIANT COLORS.** The Franklin Process of dyeing packages wound on compressible spiral springs assures uniform and complete penetration of the dye liquor to all parts of the package (see diagram).

Quality yarns and quality colors are only two of many advantages of using Franklin Process Yarn and Yarn Dyeing Service. This service is "conveniently yours" from one or all of 5 strategically located dye plants. Our Color Newsletter, issued four times a year, is also yours for the asking. It gives authoritative information about coming fashions in color. Write for your copy to-day, if you are not already on our mailing list.




(Left) Franklin Packages before compression — Note variation in density
(Right) Franklin Packages after compression — Note uniform density

Franklin Process

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Improved second feed friction

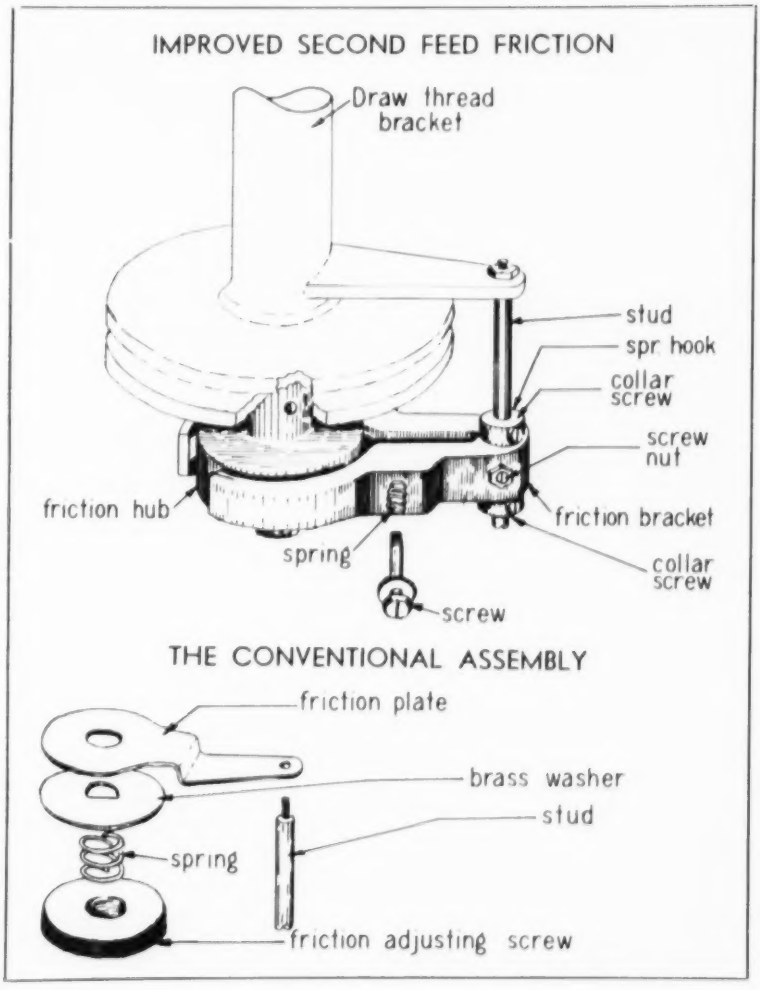
on Komet machines saves time, labor, parts, and hosiery

by K. O. Metz
Exclusive

JUST AS THE MAIN drum friction described in TEXTILE INDUSTRIES, January, 1957, p. 151, is an improvement, the second feed friction is an improvement which will save time, labor, and production on Komet machines. The new unit is shown in the illustration; the old one is sketched below in the same box.

Experience has shown what can happen when the second or auxiliary feed mechanism gets out of time with the main drum. There may be only a few sliders lost, which can be replaced in a short time. On the other hand it may be necessary to remove all cam sections from both the upper and lower cylinders, replace a hundred or more sliders, a few needles, and possibly some broken parts (and three hours may be spent doing so).

The improvement, designed to prevent the above conditions, is not expensive, and can be installed easily and quickly as follows: Remove the friction adjusting nut, spring, brass washer, and friction plate from the under side of the old draw thread bracket. Replace the existing stud with the new longer one. Install the friction hub on the shaft, the friction bracket on the stud, and place the collars as shown in the illustration. Tighten the set screw and secure it with the lock nut — the other end of the bracket with the shoes fits the large diameter of the hub. Adjust the lock screw for the desired friction.



High-pile from staple *(from page 201)*

solution that is basically acetone, and then follow by a final finish and shearing, or

B. Pass fabric through the Electro-Finisher (then reverse fabric and finish again), and follow by passages through the Wet Applicator and Shearer.

Temperatures in finishing are very critical. A difference of only 5 F can greatly influence hand and appearance of fabric. In order to maintain a uniform temperature on the face of the heated steel roll over which the fabric passes, the Electro-Finisher has six individual heating units, each automatically controlled.

One each Wet Applicator and Electro-Finisher will process the material from 20 to 25 knitting machines, the equipment manufacturers state.

Dayton 3415P
THOROBRED DeLuxe

Protect all points of shock

increase production and lower operating costs

With Dayton Thorobred | Deluxe Lug Straps Drop Box Pickers

Install Dayton Thorobred Drop Box Pickers and Deluxe Lug Straps and you immediately provide *double* protection against shock for expensive loom parts. They'll take millions of shuttle contacts and picker stick thrusts without fatigue. Because of their scientific construction they offer the *exact amount of shock absorption needed for the specific degree of shock at each and every point of contact.* Check these construction features:

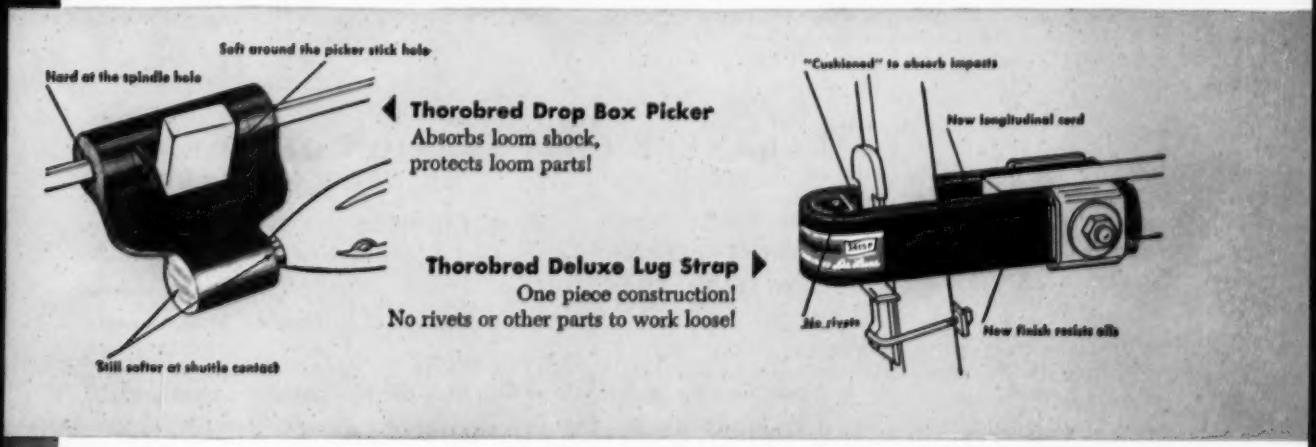
Dayton Thorobred Deluxe Lug Straps, having a one piece, rivet-free construction, give twice the service of ordinary straps. The molded plug, built into the strap loop, cushions the thrusts of the picker stick in rapid motion. Added strength is gained from a longitudinal cord in the center of the lug. Easily applied, they work perfectly in any weather.

Dayton Thorobred Drop Box Pickers, built with 3-Point Density control, provide:

1. Extra hard composition in the bearing surface around the spindle hole.
2. Softer composition around the picker hole to take terrific impacts, reduce stick wear.
3. Still softer composition at the shuttle contact to prevent loosening of shuttle point.

Dayton Drop Box Pickers are available in reversible or non-reversible construction.

To double your protection of expensive, related loom parts, increase production and cut costs ask your Dayton Jobber for additional details — he'll be calling on you soon. Or write direct to The Dayton Rubber Co., Textile Division, 401 S. C. National Bank Bldg., Greenville, S. C.


Soft around the picker stick hole
Hard at the spindle hole
Still softer at shuttle contact
Thorobred Drop Box Picker
Absorbs loom shock,
protects loom parts!
Thorobred Deluxe Lug Strap
One piece construction!
No rivets or other parts to work loose!
"Cushioned" to absorb impacts
New longitudinal cord
No rivets
New finish resists oils

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5/8" to 8" length
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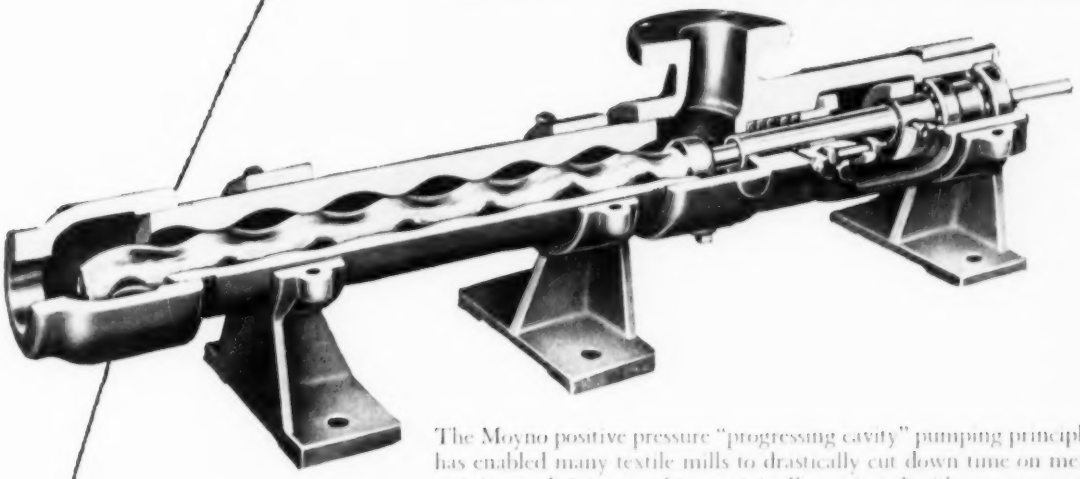
IN CANADA

Chemcel, Canadian Chemical & Cellulose Co., Ltd., 2035 Guy St., Montreal

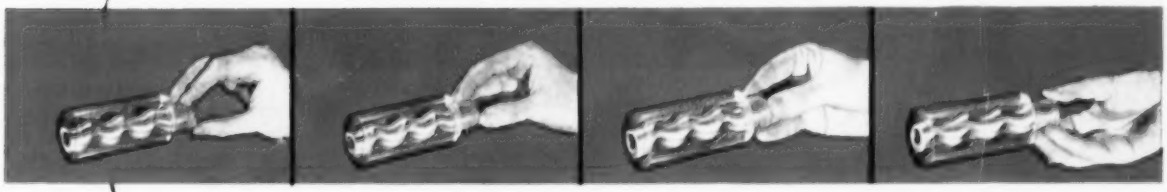
ACETATE | A Celanese CONTEMPORARY FIBER

in textile mills . . .

MOYNO® PUMPS CUT DOWN TIME



The Moyno positive pressure "progressing cavity" pumping principle has enabled many textile mills to drastically cut down time on mercerizing and sizing machines originally equipped with rotary pumps which wear quickly and lose capacity and suction characteristics. Moyno is the only pump that can satisfactorily handle many caustic alkali solutions without excessive wear, foaming or aerating.



As shown above, Moyno Pumps have a screw-like rotor that revolves in a double threaded stator creating progressing cavities which smoothly move material through the pump. They will pump anything that will move through a pipe . . . even plaster and non-pourable pastes!

Moyno Pumps are available in capacities up to 500 gpm and pressures up to 1000 psi.

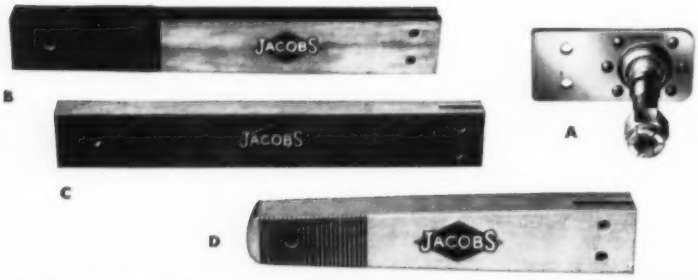
Examine your processing methods. No doubt there are several places where Moyno Pumps can drastically cut costs. Ask us, we'll give you a frank answer. Send us an outline of your problem today! Write for Bulletin 30-TI.

ROBBINS & MYERS, INC.

SPRINGFIELD, OHIO — BRANTFORD, ONTARIO

Sweepsticks and Connectors

by JACOBS *For Maximum Loom Efficiency*



A. VAN-DAR HEAD

A replaceable rod end bearing for all types of JACOBS sweepsticks. Allows close fit on pick arm stud and avoids hole elongation to give a pick that is absolutely even. Heads and bodies are individually replaceable.

B. RUBBERWELD

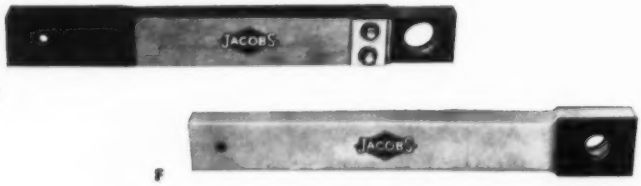
Patented construction of chemically bonded plyweld and neoprene gives the smoothest, most resilient pick known to the industry.

C. RUBBERIZED FABRIC

Molded rubber combined with fabric. Uniform consistency assures maximum strength and length of life.

D. HICKORY

Made of highest grade stock. Economical and long-wearing.



E. RUBBERWELD (with plastic head)

Has removable head of high-impact plastic. Body is long-wearing, resilient, and replaceable.

F. REINFORCED CANVAS

High quality Army Duck reinforced by plastic blocks on each side of stud hole for long wear.

The Bullard Clark Company

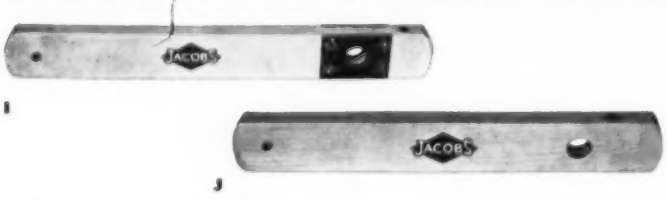
SOUTHERN DIVISION Charlotte, N. C. — **JACOBS** — **NORTHERN DIVISION** Danielson, Conn.

G. RUBBERIZED FABRIC

Molded cloth and rubber. Reinforced at stud hole by plastic plates and built up at lug hole for improved performance.

H. LAMINATED

Constructed of highest quality Plyweld or Pakweld, in regular design or streamline style for lighter weight.



I. REINFORCED HICKORY

Made of highest grade hickory with fiber reinforcements at the stud hole for longer wear.

J. HICKORY

Highest grade hickory but without reinforcements. The most inexpensive sweepstick of the JACOBS line.

JACOBS *Can solve ANY Sweepstick or Connector Problem!*

NEW EQUIPMENT PARADE

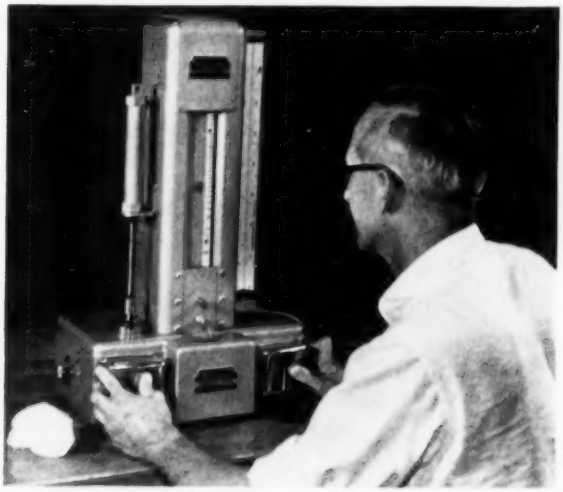
Machines and Equipment . . . Supplies and Services . . . Dyes and Chemicals . . . Books

Please note: Claims made in all of these announcements of new developments are of necessity based upon information furnished by the respective suppliers.—The Editors

Check cotton fineness twice as fast

A new model of the Micronaire fiber fineness tester has automatic fiber compression, an illuminated scale, a new well-type manometer, and is to 200% faster and easier to use than the manual compression model.

The automated model enables a fiber fineness inspection team—a weigher and a Micronaire operator—to grade as many as 1,500 or more bales of cotton per day, or as high as 6 to 8 bales per minute.



Automatic compression of the cotton sample is fast and precise. The cotton sample is squeezed to a fixed volume in the compression chamber by means of a polished steel plunger actuated by two fingertip control valves at the front of the instrument's base. Removing the fingers from the valves retracts the plunger and "pops" the cotton out of the chamber.

The Sheffield Corp., Dayton 1, Ohio.

Do you want more data? Write ◆ or use card on page 233; list B-101

Vat dyes for new printing process

A completely new line of vat colors that have been trademarked "Vantasol" is available for use in the new "Savagraph" printing process, details of which are available from the Du Pont Co.

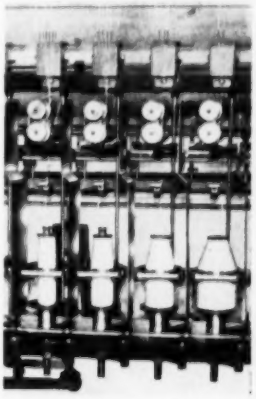
Prints produced with these colors are clear, sharp, and smooth, resembling dyed effects in the larger objects and blotch areas. These new vat dyes can be printed in patterns with aniline black and "Diagen" colors.

Dyes and Chemicals Div., E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.

Do you want more data? Write ◆ or use card on page 233; list B-102

All-purpose twister-doubler has 6" rings

A versatile, all-purpose machine with 6" rings, the Master Duplex Doubler-Twister can handle all yarn sizes and types from the finest silk, nylon, and glass, to the heaviest filament and spun natural or synthetic yarns. The traverse for straight and tapered bobbins is up to 9"; for double-tapered packages, 10½". The machine is equipped with spindle whorls up to 2½" in diameter, and will produce packages up to five pounds in weight.



Some other features of the new frame are: oilless bushings, stainless steel shafts, endless and lapless spindle belts which can be replaced in 30 minutes. Full-length balloon separators include swing-out features, thus permitting cleaning while the machine is in operation.

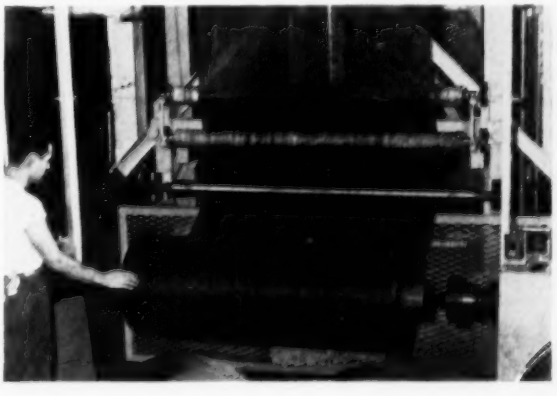
The model also includes totally enclosed unit controls with large doors permitting complete access to all mechanisms; a motor base mounted on ball-bearing sliding base; lubricant free, and nylon bevel feed gear roll drive for silent and clean operation. The custom-built creel is supplied with or without tension devices.

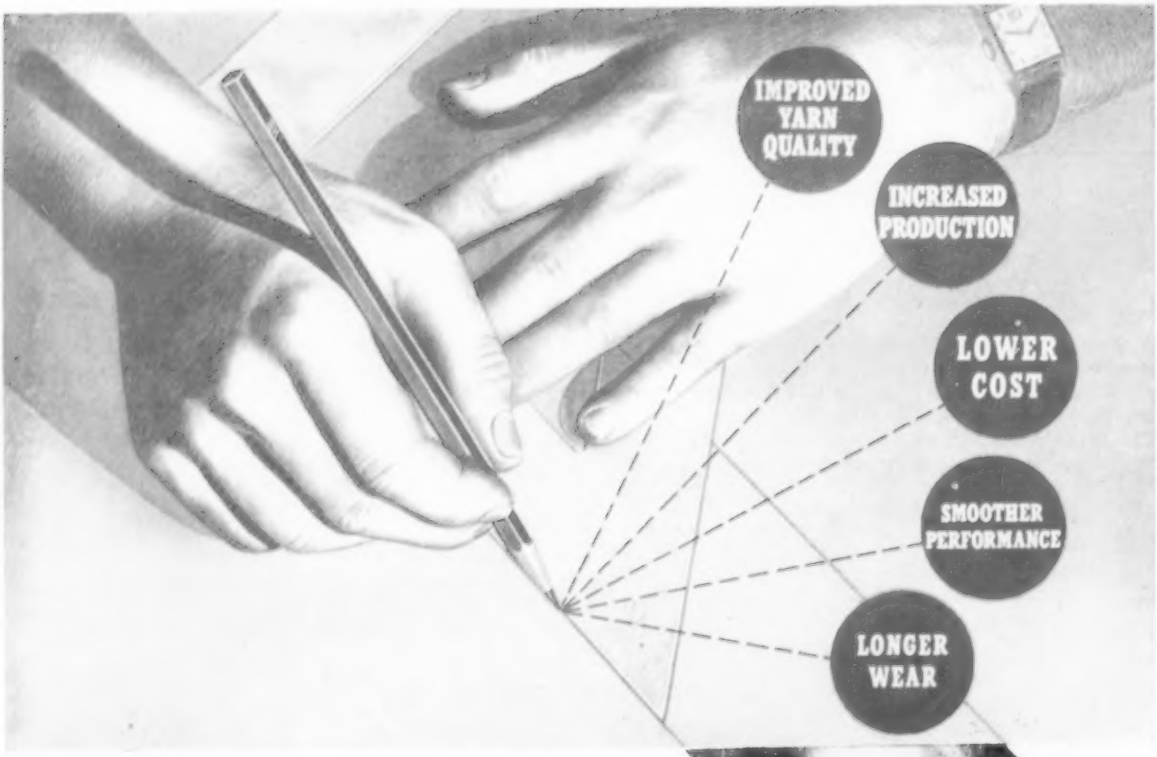
Fletcher Works, 2nd and Glenwood Aves., Philadelphia 24, Pa.

Do you want more data? Write ◆ or use card on page 233; list B-103

Unit expands and aligns open-weave goods

The Expand/Aligner, a unit which provides automatic edge, width, and centering control anywhere in the web





JENKINS PRODUCTS---

Engineered for Progressive Mills

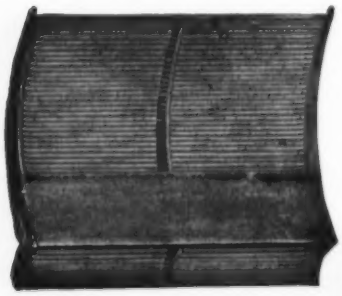
Jenkins spinning cylinders and card screens are engineered by men who for the past 45 years have pioneered *improved metal products* . . . for mills that have moved continually forward with higher quality at lower cost.

Today, more textile leaders are demanding Dynamically Balanced Spinning Cylinders, machined on exclusive Jenkins equipment to give smoother performance and more uniform yarn quality . . . Card Screens with advanced-design grid bars, and other Jenkins features which insure perfect screen settings.

Jenkins engineers are now pioneering the even-better products of the future. To be sure you're getting the *newest* advantages *first*, standardize on Jenkins equipment.

JENKINS *Dynamically Balanced* SPINNING CYLINDERS

All Machined Parts Precision Made In Our Own Shop



R. B. Jenkins, President
J. S. Jenkins, General Mgr.
B. W. Lynch, Jr., Sales Mgr.
Georgia, Alabama, Mississippi, Texas, Tennessee: J. P. Goldwire
South Carolina: J. O. Goldwire

processing of tire-cord fabrics and similar open-weave goods, spreads the fabric to counteract shrinkage, respaces selvage cords to eliminate "crowding," corrects misalignment of either or both fabric edges to prevent damaged selvages and ragged windup, and removes wrinkles—all automatically on fabrics of cotton, rayon or nylon of any denier.

The compact units are particularly useful with storage accumulators, before dipping or saturating operations, after tension drying and before calendering and windup. For tire cord fabrics, the bowed expander roll has a flat center section, while for marquisettes, gauzes, crinolines, tulies, nettings, and sheetings a radial roll is provided.

The unit's spreading action is based on the principle of the bowed axis roll in which a curved-axis rotating rubber roll offers a concave surface to the incoming fabric to spread warp cords. This basic principle has been refined in the unit by provision of a discontinuous expander roll axle having a flexible center section, so that either end may be bowed independently.

Individual thrustor motors move the roll's axle ends, and respond to prepositioned gauging heads which sense the selvage positions of the departing fabric at either edge. Should either edge of the web tend to move from gauge in either direction, the affected gauge instantly actuates the appropriate thrustor motor to readjust roll curvature for the necessary correction.

With both "halves" of the web thus completely controlled, not only are the precise desired width and selvage conditions maintained throughout the process, but the material is constantly and automatically kept on the true centerline of the equipment.

A single-roll unit gives up to 6% spreading action across the fabric width; where more expansion is required, a double-roll model is available. For more extreme spreading, or correction of unusual misalignment, two double-roll units may be applied in tandem.

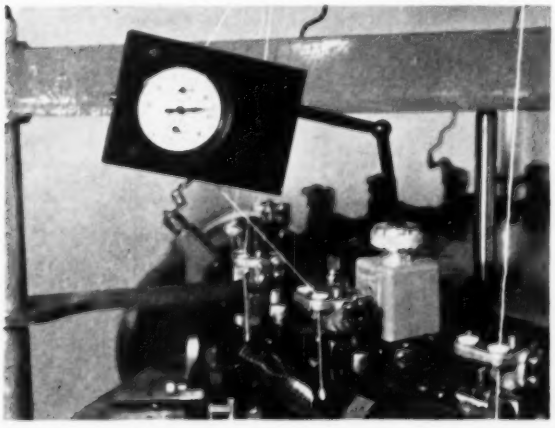
C. A. Litzler Co., Inc., 1817 Brookpark Rd., Cleveland 9, Ohio.

Do you want more data? Write ◆ or use card on page 233; list B-104

Set knitting feeds quickly and accurately

The feed balance of knitting yarns is accomplished with an accuracy of 3% for rib fabrics and 5% to 6% for flat-knit fabrics by the Hamilton Yarn Meter. The meter is equipped with a permanent-magnet-base to simplify attaching it to metallic surfaces. The dial indicates in inches (up to 1000) the amount of yarn passing through.

A recommended approach to the measuring is to attach the instrument to a feed and record the amount of yarn used in ten revolutions of the knitting machine. This may be repeated on as many feeds as desired (or several meters used to record the results from several feeds simultaneously) until the average for all feeds is obtained and the knitting machine set accordingly. The unit makes it possible to record the settings used for a particular fabric in order to duplicate the fabric later with a minimum of setting-up time.



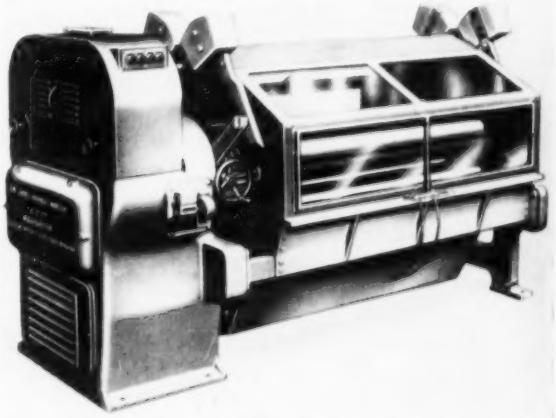
Scott & Williams, Inc., Laconia, N. H.

Do you want more data? Write ◆ or use card on page 233; list B-105

Enclosed dye jig features tension control

A controlled tension dye jig, made by Sir James Farmer Norton & Co., Ltd., Manchester, England, is push-button controlled and can be used either as a fully automatic machine, or hand-operated for light shade work.

The machine permits complete control over the amount of tension necessary to suit the requirements of the fabric



under process. This control is obtained electrically, and is such that it is possible for acetate and viscose fabrics to be dyed without any extension in the length taking place. Furthermore, a definite shrinkage in the length of the fabric can be effected if required.

Dynamic brakes bring both rolls to rest at the same time at the end of each pass. A constant speed is maintained throughout the length of the run by an electrical device which allows the speed of the draw rollers to increase and decrease automatically as the batches change in diameter on the two rolls.

When set for automatic operation, any number of reversals up to a maximum of 25 can be obtained.

R. J. Dealy & Sons, 263 Summer St., Boston, Mass.

Do you want more data? Write ◆ or use card on page 233; list B-106

Control feeds size at rate it is used

Liquid level in size boxes, dye vats, etc., is controlled by a regulator which permits the material to flow at the rate it is being used. A 1", Teflon-coated bubbler operates in the size without troublesome size sticking and consequently remains free to exercise precise control over liquid flow.

In size feeding, the regulator permits the size to flow uniformly without periodic intense flow to loosen and wash caked size off the box. Caked size actually is re-

do you know how much

PNEUMAFIL® C.A.H.*

(CENTRAL AIR HANDLING)

can save you on your initial

AIR CONDITIONING

investment and operating costs . . .

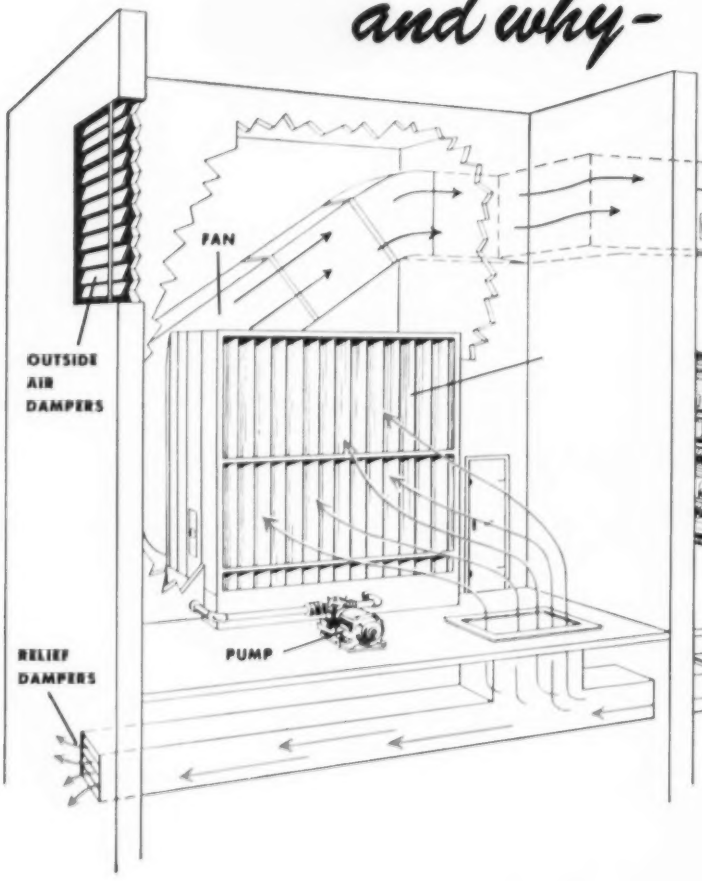
and why—

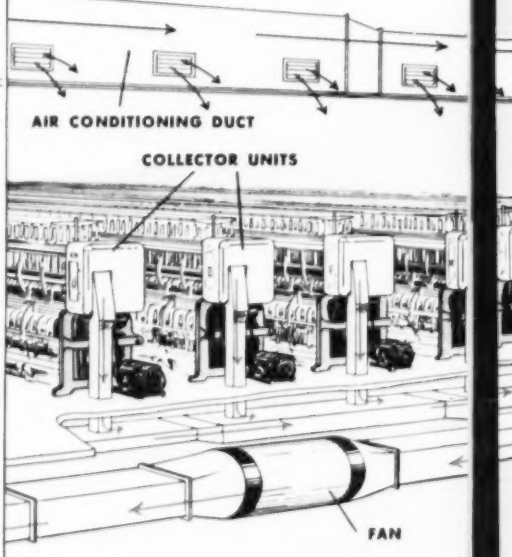
WHETHER your future air conditioning system is of the Dry Duct, Central Evaporative Cooling, or Refrigeration type, Pneumafil C.A.H. will drastically cut your air conditioning investment and reduce its yearly operating cost.

And that's not all!—In addition to these savings, only the Pneumafil C.A.H. system can give you ideal temperature and humidity control that is so vital in the operation of today's modern spinning room.

When your air conditioning and Pneumafil C.A.H. are designed together, you buy smaller ducts, smaller fans, smaller motors, smaller air washers, smaller pumps, and a smaller space is needed for the apparatus housing.

Let our air conditioning engineers survey your mill and help you with your planning—no obligation, of course.





Heat is picked up at its source and conveyed (red arrows) to the air conditioning system where it is automatically exhausted to the outside or returned to the spinning room as conditions demand.

We are currently converting Pneumafil Unit System (individual motor and fan on each frame) to Pneumafil C.A.H. If you now have unit type, you should consider this conversion.

PNEUMAFIL CORPORATION

CHARLOTTE 8, NORTH CAROLINA

Sales Offices:

Atlanta, Ga.

Needham Heights, Mass.

*Patented

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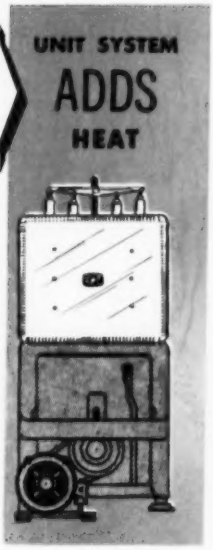
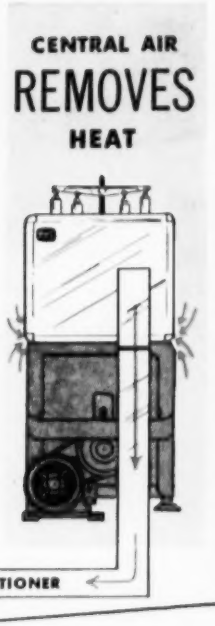
PNEUMAFIL®

HERE'S WHY YOU SAVE MONEY WITH PNEUMAFIL C.A.H.®

(CENTRAL AIR HANDLING)

THIS IS HOW MUCH MONEY YOU SAVE ON YOUR AIR CONDITIONING...





FIGURES REPRESENT DOLLAR SAVINGS		HORSEPOWER PER SPINNING FRAME 5 hp	7.5 hp	10 hp	15 hp	20 hp
WHEN YOU BUY IT	DRY DUCT SYSTEM	9,600	11,700	13,650	17,250	21,300
	CEN. EVAP. COOLING	12,800	15,600	18,200	23,000	28,400
WHEN YOU OPERATE IT FOR 10 YEARS	DRY DUCT SYSTEM	3,420	4,164	4,680	6,200	7,600
	CEN. EVAP. COOLING	5,392	6,560	7,360	9,800	12,000
TOTAL	DRY DUCT SYSTEM	13,020	15,864	18,330	23,450	28,900
	CEN. EVAP. COOLING	18,192	22,160	25,560	32,800	40,400

BASED ON 100 FRAME SPINNING ROOM

REFRIGERATION TYPE SYSTEM

Refrigeration savings (not shown on chart) are even greater than those above. These savings are so variable, an average would be misleading.

HERE'S WHERE YOU SAVE MONEY

OPERATING COST

WITH CENTRAL AIR HANDLING

WITH UNIT

Perfected Cleaning!

ceiling to floor

- Each unit self-propelled.
- Independent air streams for room surfaces, frame areas, floor.
- Air directions and velocities are adjustable. Automatic dampers available.
- Sleeves below head height are flexible.
- Frame cleaner adaptable to all creels.

ROOM CLEANER (revolving continuously) for ceiling and other overhead surfaces. High velocity air.

FRAME CLEANER

Rugged track with shielded electric contactors.

Short sleeve for top creel board, tapers and spare roving.

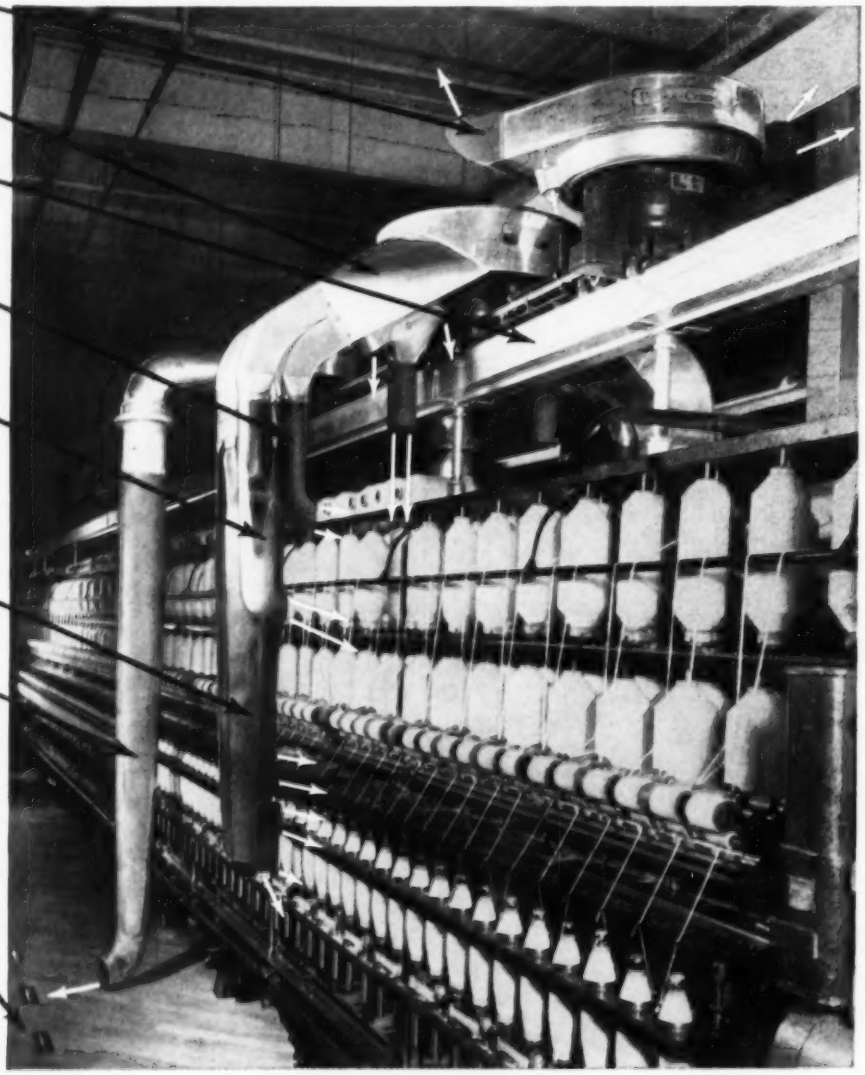
Medium length sleeve for middle creel board and roving tapers.

Long multi-outlet sleeve for bottom creel, thread board, roll stand area, ring rail, spindle rail and underframe. High velocity air.

FLOOR SWEEPER

Floor sweeper outlet turns on curves. Low velocity air.

Vacuum removal of floor sweepings at two or more alleys.



Parks-Cramer Company

FITCHBURG, MASS. • CHARLOTTE, N.C. • ATLANTA, GA.

405

duced by the constant level maintained.

In operation, a restriction valve is adjusted to allow a slight amount of air to escape through the Teflon-coated bubbler which is immersed in the liquid. As the liquid level falls, the pressure the liquid is exerting on the air issuing from the bubbler drops. As this pressure falls, the back pressure to the static pressure regulator decreases which causes an increase in air pressure to the diaphram reverse acting valve. This allows the valve to open and introduce liquid. The faster the liquid is used, the more the valve opens.

The Powers Regulator Co., 3400 Oakton St., Skokie, Ill.

Do you want more data? Write ◆ or use card on page 233; list B-107

Rayon carpet yarn resists soiling

Super-L rayon carpet fiber has been especially tailored for use in carpets with loop construction where its bulking properties contribute improved texture and appearance. The fiber also presents greater wearing properties to carpets.

The skin of the new fiber is absolutely smooth, and presents no crevices to catch and hold particles of dirt. Thus it has soil resistance comparable to wool. It also is nonsensitive to oil.

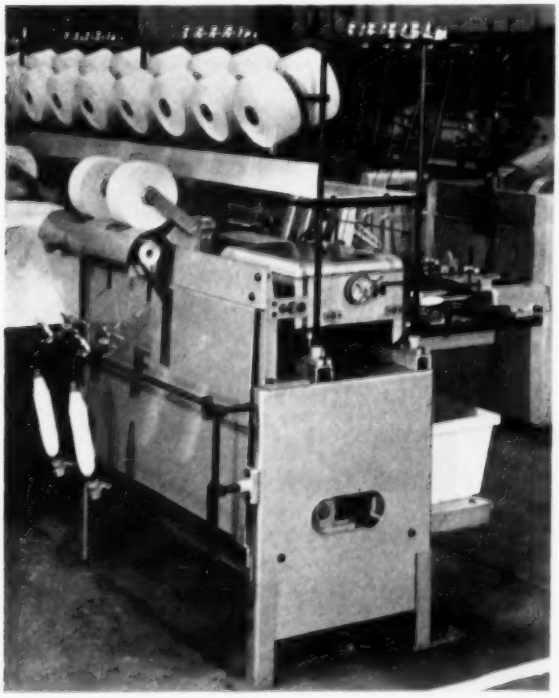
Available in any denier, the fiber is also adaptable for cut-pile constructions where substantial percentages of wool, Acrilan or other man-made fibers are used.

American Viscose Corp., 1617 Pennsylvania Blvd., Philadelphia 3, Pa.

Do you want more data? Write ◆ or use card on page 233; list B-108

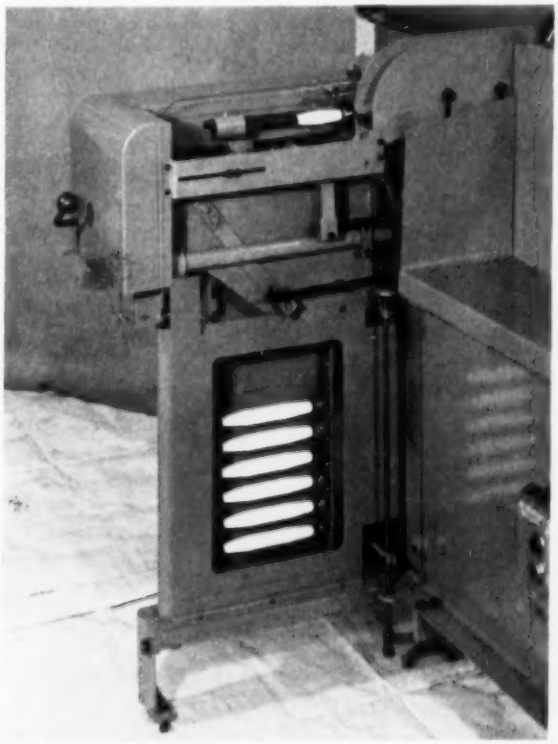
Three interesting new filling winders

The Combi winder incorporates two winders on a single machine. On one side of the machine is a winder which prepares cheeses from spinning packages. On the other side of the machine is a standard Britoba filling winder which uses the packages from the machine first-mentioned to supply the yarn for the filling winding. The yarn output of the first machine is in balance with the filling winder.



A second machine is the SS 166 which is a high speed, hopper-fed filling winder built in units of 24 and 36 heads.

A third winder prepares filling packages of fine filament nylon at speeds up to and above 15,000 rpm. The winder doffs and delivers the filling to a tray without letting any mechanical part touch the yarn.



Muschamp Textile Machinery, Keb Lane, Bardsley, Oldham, England.

Do you want more data? Write ◆ or use card on page 233; list B-109

Anti-static agents applied anytime

New Anti-static agents, called Elosol, are available in three types: Elosol SG, Elosol V, and Elosol UW. Each is suitable for application to synthetic fibers in loose, yarn, and piece goods form. Application of the product is simple, and may be carried out during any stage.

Elosol SG is a water soluble, neutral, nonionic, cream-colored paste which imparts a soft hand and a slight scroop to the fiber. The antistatic effect withstands rinsing with boiling water but is not fast to washing. An anhydrous brand, Elosol SG conc., can be added to mineral or vegetable oil lubricants or softeners for spinning, combing, or sizing.

Elosol V is a neutral, nonionic, clear viscous liquid of brown color, easily soluble in water. It has no noticeable effect on the hand of the goods. The anti-static effect obtained with Elosol V is fast to rinsing with boiling water, but it is not fast to washing. Elosol V is suitable for addition to oil-in-water emulsions.

Elosol UW is a neutral, brownish paste of cationic

character. It also acts as a softening agent. The effect obtained with Elosol UW is fast to hot and cold rinsing and also fast to washing—as long as soap or synthetic detergents are used at temperatures not exceeding 105 F. It is not fast to washing with soda ash.

Sandoz Chemical Works, Inc., 61-63 Van Dam St., New York 13, N. Y.

Do you want more data? Write ◂ or use card on page 233; list B-110

Seamless hose knitter offers improved looping line

Italian-built Santoni 400- and 472-needle knitting machines are available to mills in the United States. Among the features of the machines are an air take-up device for a cleaner stitch, a delayed cotton attachment, an improved looping line, and demi toe attachment. Either Torrington or Swiss Agula needles may be used; thus needle supply is no problem. All parts for the machine are available in the United States.

La Mode Hosiery Corp., 2004 Thomas St., Hollywood, Fla.

Do you want more data? Write ◂ or use card on page 233; list B-111

Web guides perform at several points at once

Three vacuum-piloted, hydraulically-actuated web guide units are available:

The MPA-2 unit will automatically guide at two separate points independently and yet simultaneously from a single, compact power source. This unit is particularly adaptable to tenter frames, separate webs in laminating, and for guiding into inspection and rewind on the same machine. The unit is also suitable for guiding on two different machines as long as they are located in the same immediate vicinity.

The MPA-3 model is the same as the MPA-2 except that it is designed to perform three automatic guiding operations.

The MPA-6 will automatically guide 4, 5, or 6 jobs at once.

Fife Mfg. Co., P. O. Box 878, Oklahoma City, Okla.

Do you want more data? Write ◂ or use card on page 233; list B-112

Tiny spinning plant makes yarn samples

The "Shirley" miniature (app. 110 sq ft) spinning plant (see TEXTILE INDUSTRIES for September, 1956, p. 115) contains a miniature card, a small drawing frame, and an eight-spindle, single-sided spinning frame equipped with Casablancas drafting. The miniature plant, modified to accommodate the small scale samples used, operates along conventional lines.

Samples consisting of as little as 1¼ oz of raw material can be spun into a yarn whose properties are closely correlated with the properties of yarns prepared normally. Such samples can be prepared within an hour.

Since it is possible to predict the properties of commercial yarns by the disclosures of the miniature plant, the unit makes it possible for the spinner to guide the purchase of raw stock, estimate the possibilities of

for superior finishes...
complete removal of size is a first essential

RAPIDASE®

UNEQUALLED FOR DE-SIZING AT HIGHEST TEMPERATURES AND AT HIGHEST SPEEDS

In concentrations to meet every requirement ... in liquid or powder form ... RAPIDASE is universally used for cottons and all fabrics containing man-made fibres.

WALLERSTEIN COMPANY, INC., 180 Madison Avenue, New York 16, N. Y.

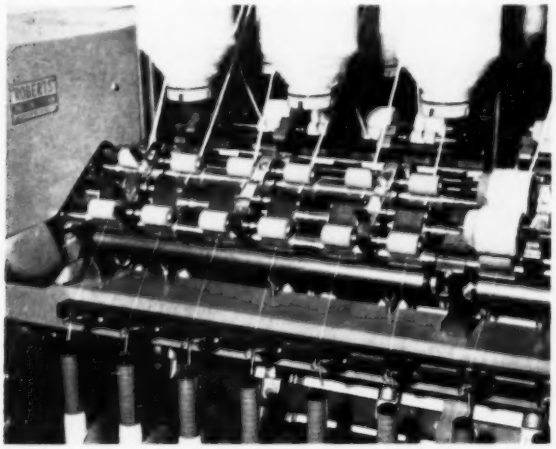
blends, and color match his yarns without expensive trial runs.

Atkinson, Haserick & Co., Inc., P. O. Box 509, Framingham, Mass.

Do you want more data? Write ◆ or use card on page 233; list B-113

Dead-weight or spring-weight this spinning

Adaptable to several drafting systems as well as its own, the Roberts Top Roll Suspension embodies, among other things, double-row ball bearings in the front, middle, and back lines. The system was described in detail



in the Mid-November issue of TI, 1956. In the photograph a close-up of the system shows the relative thickness of the cots which are made with a ½" hole diameter. Sequence buffing is possible, since the front and back rows are interchangeable.

Roberts Co., Sanford, N. C.

Do you want more data? Write ◆ or use card on page 233; list B-114

Fluid drive permits acceleration control

The Type VS Class 2 Gyrol fluid drive, designed to be applied to industrial machinery, permits the motor to reach its operating speed under practically no load conditions. This allows the motor to come up to speed quickly and avoids delayed rotor acceleration, heavy current demands, and poor rotor ventilation. The cushion of power transmitting oil protects both the driving and the driven equipment from shock or torsional vibrations. Wear and maintenance are negligible in the drive because slip takes place in a vortex of oil. The drives are offered in four sizes from 1 to 25 hp.

The drive is completely self-contained and ready for immediate installation. No alignment of individual bearing pedestals is required.

Controls available consist of either Micro-Scoop or Lever Speed Control. The former is for manual operation; the latter for automatic operation. Speed control is stepless, and as such is adjustable in minute graduations over a wide range. At the same time, a means of rapid clutching or declutching is provided where required.

The rate of acceleration may be governed by regulating the rate of movement of the scoop tube. Loads may therefore be either quickly or gradually brought up to speed, depending on the requirements. Acceleration control also permits the selection of the driver to be sized for the

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• For more than a century, COLE elevated tanks have been helping provide fire protection and adequate water reserve for the textile industry.

Capacities from 5,000 to 2,000,000 gallons —and covering designs ranging from standard hemispherical self-supporting bottom to spherical tank on tubular tower. Send us your inquiry, stating capacity, height to bottom and location. Write for *Tank Talks.*

R. D. COLE MANUFACTURING CO. COLE NEWNAN, GEORGIA

Elevated Tanks, Pressure Vessels, Chemical and Processing Equipment from Aluminum, Stainless and Carbon Steel, Monel and Other Alloys.

Established 1854

R. D. COLE MANUFACTURING CO.
NEWNAN, GEORGIA

required breakaway torque and the running horsepower, rather than oversizing the driver for unnecessary torque and rapid acceleration.

American Blower Corp., Hydraulic Coupling Div., Detroit 32, Mich.

Do you want more data? Write ◆ or use card on page 233; list B-115

Aluminum formate in powdered form

A preparation of aluminum formate, available in powder form, contains 30% active aluminum oxide, is used for waterproofing textiles and as a mordant for alizarine dyes. Formic acid is yielded on hydrolysis of the formate. This acid is volatilized on drying.

The formate may be used in combination with paraffin emulsions in the impregnating bath — the proofing effect of such paraffin emulsions is thereby increased materially. The formate imparts a luminous and attractive appearance to cotton, rayon, and synthetics and gives a firmer and crisper feel to wool gabardines.

Aceto Chemical Co., Inc., 40-40 Lawrence St., Flushing 54, N. Y.

Do you want more data? Write ◆ or use card on page 233; list B-116

Tensile tester is versatile unit

The Karl Frank tensile strength tester No. 653 will test fabrics, leather, belts, hemp ropes, boards, plastics, wire, etc., with a guaranteed accuracy of plus or minus 1% from 1/10 of the load range upward. Three load ranges, with a dial for each, are provided: 550 lb, 1100 lb, and 2200 lb.

Other features include a stretch measuring device, force indicator and recorder, rapid clamps, and variable test speed control. A means for puncture-testing is also provided.

The test speed limits are approximately from 9.8 inches per minute to 19.6 inches per minute—the fixed return speed of the clamps is approximately 59 inches per minute. Also the length between the clamps is made adjustable by means of stops.

Testing Machines, Inc., 123 West 64th St., New York 23, N. Y.

Do you want more data? Write ◆ or use card on page 233; list B-117

Steam-air press sizes sweaters automatically

Now sweaters can be automatically pressed to exact size by a Paris Sweater Finisher which shapes and presses all knitted fabrics, whether full-fashioned or cut and sewn. Individual steam and drying cycles are used for natural fibers, synthetics and blends. Its automatic action handles both pullovers and cardigans with either short or long sleeves.

The finisher handles the full range of sizes with only a single manual setting. The machine's moving parts automatically and instantaneously expand to the exact dimensions of each manufacturer's own range.

Untouched by any rigid substance, the garment is moistened and dried by a balanced control of steam and air. Undisturbed by any unevenness of pressure, the hand

ONLY BORNE HAS IT!

Identification
on All Synthetics—Blends
Plus **FUGITIVITY**
UNMATCHED
ON NYLON & WOOL!

The Amazing New
SOLUTINTS

SOLUTINTS are a series of fugitive tints that provide identification, lubrication, and improved processing of all natural and synthetic fibres. In addition to giving *maximum tinctorial strength* — SOLUTINTS combine controlled moisture retention with *improved scourability.*

Contact
BORNE CHEMICAL COMPANY, INC.
82 Years of Textile Know-How
Formerly BORNE, SCRYMSER COMPANY
Elizabeth, N. J. • Charlotte, N. C.

of all knitted fabrics is enhanced.

Variations in size—either stretching or shrinkage, lack of uniform shaping, uneven finish, pressure marks and other imperfections are precluded by the finisher's action.

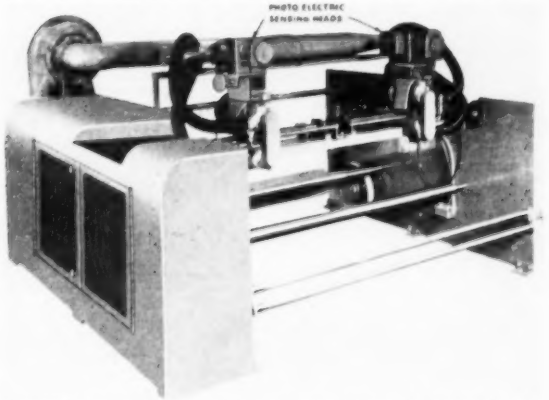
Aside from placing the garment on and removing it from the machine, every step of the operation is completely automatic. Therefore the quality of the finish and the rate of production (aside from the loading and unloading) are not dependent on the skill of the operator. Any unskilled person can learn to operate the finisher in a matter of minutes.

Garment Finishing Equipment Corp., 18 Brattle St., Cambridge 38, Mass.

Do you want more data? Write ◆ or use card on page 233; list B-118

Trimmer does not nick slack selvages

Both slack and wire-loop selvages can be trimmed by the VS Selvage Sensing Machine without nicking the selvages or cutting the wire loops. The machine operates with a sensing element consisting of a split beam photo-



electric eye equipped with two-way controls instantly adjustable for varying cloth trimming conditions. The controls, by actuating the traverse of the trimming units without touching the cloth, give a trimming accuracy within 3/32".

Hermas Machine Co., 225 Warburton Ave., Hawthorne, N. J.

Do you want more data? Write ◆ or use card on page 233; list B-119

Acetate yarns give improved processing

A form of acetate fiber, Eastman "50", is available in both Estron and Chromspun. Compared with the conventional form of acetate yarns in fabrics of identical constructions, the fiber gives: (1) better cover with from 5% to 10% greater bulk; (2) a crisper, firmer hand; (3) equal or better fabric tear strength and abrasion resistance; (4) a higher, more uniform luster with more intense fabric highlights; (5) from 3% to 5% greater insulation; and (6) longer retention of fabric characteristics.

While adding the above, the yarns possess no changes in general properties, such as tensile strength, recovery, moisture regain, effect of heat, age, sunlight, acids, and other chemicals. The yarn processes better than regular acetate on conventional textile equipment. Dyeing and finishing may be handled in the same manner as regular forms of acetate.

Some of the fabrics already produced: crepes, taffetas, including crystal-filled taffetas, velvets, luana-type fab-

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Career companies like yours . . . and ours, have a way of doing business that reflects their confidence, pride, and interest in their industries. Our chosen career is coal. And we think you'll find a career attitude reflected in what we offer you. More types of higher quality coal. Greater uniformity. Superior preparation. Guaranteed reserves far greater than all the coal we've mined.

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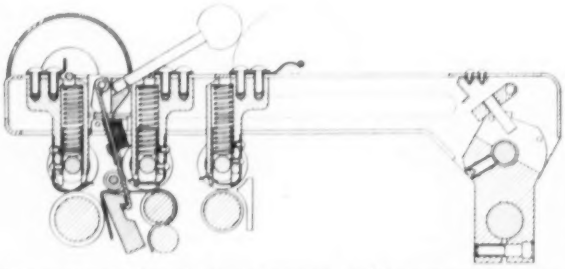
rics, satins, linings, lastex fabrics for swimwear and foundation garments, tricots, and drapery fabrics.

Eastman Chemical Products, Inc., Kingsport, Tenn.

Do you want more data? Write ◂ or use card on page 233; list 8-120

System drafts all fibers from 2⅜" to 8"

A drafting element for the M.S. 2 speeder and the M.R. 3 spinning frame which handles staples from 2⅜" to 8" is now available to mills in the United States. Made by Platt Bros. (Sales) Ltd., Oldham, England, the system, called Versatex LS, is designed to handle roving or

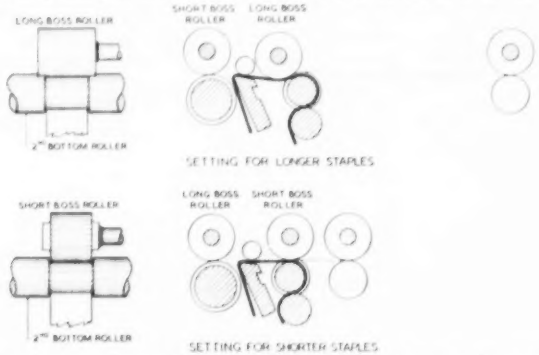


This sectional view of the Versatex LS drafting system shows the position of the apron and rolls, the spring weighting devices, and the locking device of the roll arm.

sliver, and to embrace the full range of fiber lengths, deniers, and types of man-made fibers, and blends.

The drafting element consists of a front pair of drafting rolls, and a back pair of feeder rolls. Between these is a special pair of rolls whose function is to drive the endless drafting apron. The apron passes over a stationary bar which is positioned close to the front rolls to provide maximum fiber control.

All the top rolls are carried in holders secured to a sturdy hinged arm. To apply pressure to these rolls the



By changing the position of the rollers the system may be converted swiftly from a slip-draft unit to a two-zone drafting unit to accommodate fibers from 2⅜" to 8".

holders are fitted with springs which enable roller grinding to be carried out without any significant alteration to the weighting.

Front and back roll pressure is independent of the roll setting, and requires no adjustment. The control roll (second top roll) loading varies only slightly as the roll is moved in its settings for slip or single-zone drafting. Both top and bottom rolls are equipped with ball bearings.

The drafting apron is located in a recess in the second

Avondale Yarns

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quality-controlled for uniformity and consistently superior performance on your knitting machines

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BOSTON	NEW YORK	CHARLOTTE	PHILADELPHIA	CHATTANOOGA	READING	CHICAGO
Liberty 2-9611	Lackawanna 4-8400	Edison 4-5379	Rittenhouse 6-3754	Long distance 38 or Chattanooga 6-4014	Reading 2-1122	Dearborn 2-4594

bottom roll. The second top roll is slightly longer than this recess and bridges it without exercising any pressure on the apron for slip drafting. Shorter fibers in the material are additionally controlled, according to circumstance, by either a bar or a pencil roll resting on the apron and mounted in adjustable brackets which will accommodate either component.

Merely by changing the front and second draft rolls the drafting zones can be changed from single (for fiber lengths from 3" to 8") to two-zone drafting for fiber lengths from 2⅜" to approximately 3".

The cot width of the front top roll is equal to the apron width. When this roll is moved to the second line the cot fits into the recess on the second bottom roll and rests directly on the apron, thus forming a positive nip at this position. In this manner the slip draft conditions are transformed into a two-zone system similar to orthodox single-apron drafting.

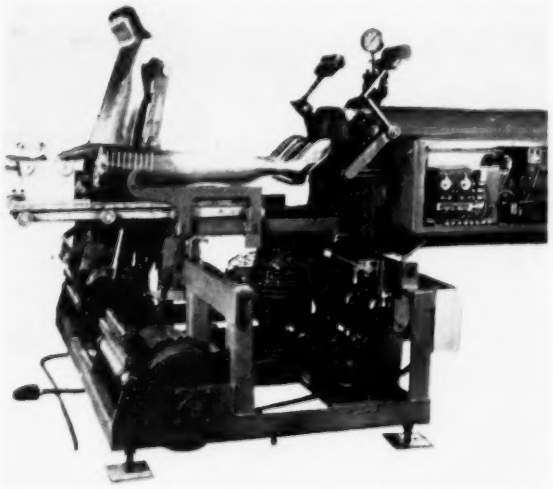
Atkinson, Haserick & Co., Inc., P. O. Box 509, Framingham, Mass.

Do you want more data? Write ◂ or use card on page 233; list B-121

Up hosiery retort capacity 40%

An automatic carriage and form actuator, the ACFAB, is fabricated to be attached to Paramount horizontal retorts. Depending on the present operators, and whether the machines are being used for preboarding or for final boarding, the unit will increase the productive capacity of horizontal machines up to 40%.

If preferred, the owner may have present equipment brought completely up to date by having new electrical and air-operated controls replace the electrical and steam valve controls. The complete conversion also includes the



cutting of an opening into the rear of the machine and the insertion of a fan to speed drying after steaming.

Actuation is automatic. To start the cycle the operator steps on a hose which is connected to a pressure switch. Four forms are immediately brought to position for stripping simultaneously. Automatically three forms return leaving one form for boarding or dressing. The operator has but a few seconds to complete this dressing before another form is brought into position for boarding.

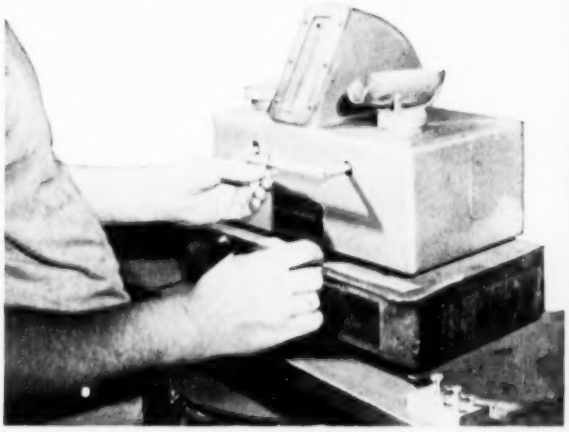
In case of operator error, the actuation is stopped by stepping on the hose switch. When the error is corrected, another touch to the switch resumes the cycle. When a

greater accuracy

greater speed

longer life with

SHADOGRAPH



Weight indication by a beam of light removes all friction from indicating mechanism—assures extreme accuracy. Short lever fall and a special damping action give fast readings—1.1 seconds required per weighing. A rugged structure and time-proven craftmanship ensure trouble-free service. Model 4204, above, is designed so that the commodity receptacle, weight platter, beam and poise are exposed and a removable cover plate gives access to interior parts. All parts necessary to the weighing operation or weight changes are directly in front of the operator.

Hundreds of EXACT WEIGHT Scales are giving accurate, fast, trouble-free service in Textile plants both here and abroad.

EXACT WEIGHT Scales are available for color control, slashing, sliver test, yarn count, quality control, denier testing and checkweighing.

Model 4104, End Tower Shadograph, right, is precision designed for weighing samples in conjunction with the Sheffield Micronaire testing machine. Write for complete details.

Sales and Service
Coast to Coast

Exact Weight Scales

Better quality control
Better cost control

THE EXACT WEIGHT SCALE COMPANY

922 W. Fifth Avenue, Columbus 8, Ohio

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carriage of 24 forms is completely dressed, the operator then touches another foot switch so that the carriages may be moved transversely for positioning to enter the retort chamber.

Paramount Textile Machinery Co., 131 South Wabash Ave., Chicago 3, Ill.

Do you want more data? Write ◆ or use card on page 233; list B-122

Clean spinning clearers speedily

Spinning roller clearers are cleaned rapidly by an operative using a manual stripper made by Howard & Bullough Ltd., England. Mounted on wheels and possessing a light but rigid framework, the stripper consists of a hand-operated stripping brush, a stripping comb to remove any waste embedded in the brush bristles, and a removable receptacle to hold the waste extracted by the comb.

The operative transfers the rollers from the frame one at a time, places them on the stripper roll, and turns a crank which drives the stripper (usually one turn is sufficient) until the clearer is clean.

Atkinson, Haserick & Co., Inc., P. O. Box 509, Framingham, Mass.

Do you want more data? Write ◆ or use card on page 233; list B-123

Timing steamer for open-width bleaching

"Roto-Bleach," a timing steamer for cloth storage use in continuous bleaching ranges following the acid, caustic, and peroxide saturators, offers the following advantages: costs less to build, uses ¼ the floor space required by the conveyor-type timing steamer, eliminates tangles, and is adaptable to rope storage as well as to open width storage of fabrics.

Cook Machine Co., Inc., Nashua, N. H.

Do you want more data? Write ◆ or use card on page 233; list B-124

Roving tester gives drafting resistance

The operation of the Resistiro-Rex (made in France by Paul Litty) roving tester is based on the assumption that rovings of the same count should offer the same resistance to drafting. Drafting resistance for each count has been established, and the machine must be adjusted accordingly before the test is undertaken.

The instrument will test rovings made of cotton and of synthetic fibers up to approximately 2.35" in length. Instead of showing the uniformity of the roving, the machine indicates and records if the roving is too hard, too soft, correct; gives the drafting evenness, and discloses if the roving were made under correct tension from start to finish.

No knowledge of the type and characteristics of the raw material is needed by the operative. The tester automatically deals with that factor.

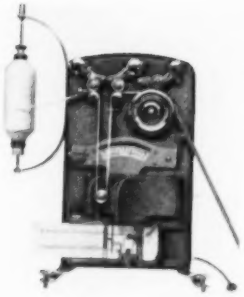
The roving is threaded through the tester to run continuously from a bobbin. The instrument subjects the

A New and Better Stainless Steel Dye Sleeve for B-C Winders

The heavier gauge stainless steel used in this new sleeve supplies its own rigidity and eliminates ribbing. This permits greater hole area and assures much faster dye penetration. Beaded and flared bottom prevents yarn slippage. This simplified construction saves up to 15% in initial cost. Greater strength gives longer service. All sleeves are perfectly sized for roundness and the holes are evenly spaced for uniform dye penetration. Ends are 100% level and rounded to prevent snagging. All tubes are pacivated for corrosion protection. Write today for samples and quotations.

Several hundred thousand sleeves of the type shown at the right are now giving superior service on Foster, Abbott, and Universal Winders.

TOOL SERVICE ENGINEERING CO.
309 W. Crowell St. Monroe, N. C.



roving to a constantly increasing load until the roving begins to part. An automatic brake prevents the complete severance of the material and ensures the continuance of the test.

The center of the scale and the centerline of the diagram indicate the normal and the correct drafting resistance. In this position the weight upon the roving is equal to the standard drafting resistance for the relative count. With the machine is provided a set of interchangeable weights numbered as to counts.

Stellite American Corp., 60 East 42nd St., New York 17, N. Y.

Do you want more data? Write ◆ or use card on page 233; list B-125

Fine denier tire cord yarn

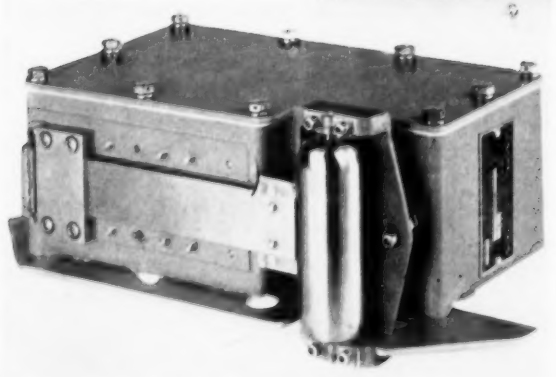
A high-strength rayon yarn constructed of low-denier filaments widens the range of yarns tailored for industrial use. The yarn is available in sizes of 1.0 to 2.25 denier per filament, and in total denier sizes from 1100 to 2200 denier. With or without twist, the yarn is offerred in a wide range of strength and other physical characteristics. In the low denier Rayflex type, the tire cord approaches nylon strength characteristics.

American Viscose Corp., 1617 Pennsylvania Blvd., Philadelphia 3, Pa.

Do you want more data? Write ◆ or use card on page 233; list B-126

Web tensiometer does not damage material

The tension on any moving web such cloth being processed on tenters, dry cans, calenders, center wind reels or batchers, can be measured without damage to the material by a tensiometer which uses a small roller



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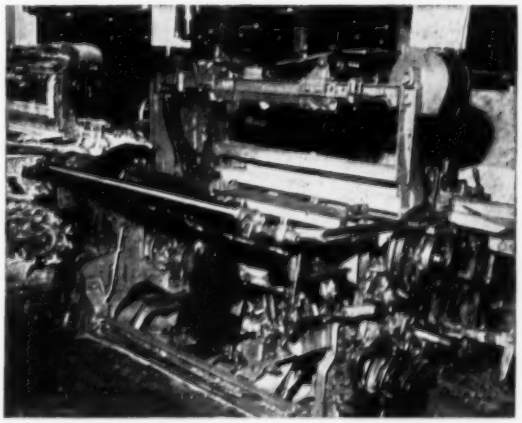
remove lint stop seconds improve efficiency

● Inhibits Rust ● Safe to Skin



LINTGO leaves machinery clean and lint-free as above. Lint does not swirl into the air.

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LINTGO reduces slubs, seconds, and improves quality. It is non-corrosive, odorless, non-flammable, fumeless, non-toxic and inhibits rust. It can and will solve your lint problems quickly, easily, economically and without hazard. Ask for free demonstration today using the handy, postage-paid return card on page 233 or by writing direct to

Lester Laboratories, Inc.

P. O. BOX 4897 ATLANTA 2, GA.

mounted on ball bearings to depress a portion of the web and thus indicate the resistance.

The device is equipped with an indicating dial graduated in arbitrary units from 0 to 100. Roller movement changes the air gap of a magnetic structure which emits an electrical signal proportional to the tension.

General Electric Co., Schenectady 5, N. Y.

Do you want more data? Write ◆ or use card on page 233; list B-127

Range of azoic dyes offers new printing speeds

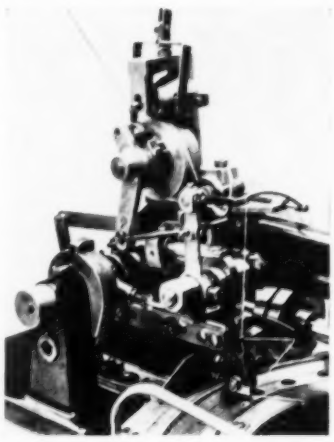
A new range of azoic colors, Neutrazoic dyestuffs, designed for use with the Riegel Flash-Acid Ager, permits increased printing speeds and reduced seconds. The ager, a compact machine, is geared to the take-off end of the print machine, and operates at all printing speeds. The combination of dyestuff and the ager create new printing procedures in which the material is printed, can-dried, aged, and swung into boxes at full speed in one continuous operation. Immediate inspection can be made at the doffing end of the print machine.

Washing, which is optional, can be performed without concern for bleeding, since the dyestuffs are faster to washing than are ordinary stabilized azoics. The dyes are available as a complete range in standard strengths and azoic shades as solutions, double solutions, and powders. No formula changes are required from presently used stabilized azoics.

Atlantic Chemical Corp., Dept. TI, 153 Prospect St., Passaic, N. J.

Do you want more data? Write ◆ or use card on page 233; list B-128

Looper tension unit suitable for cashmere



A tension device, designed for use with Sotco loopers, gives a regulated stitch with complete evenness, and is suitable for working cashmere or lambswool yarn. It is easily fitted by mechanics at the local scene. No extra holes must be drilled for it.

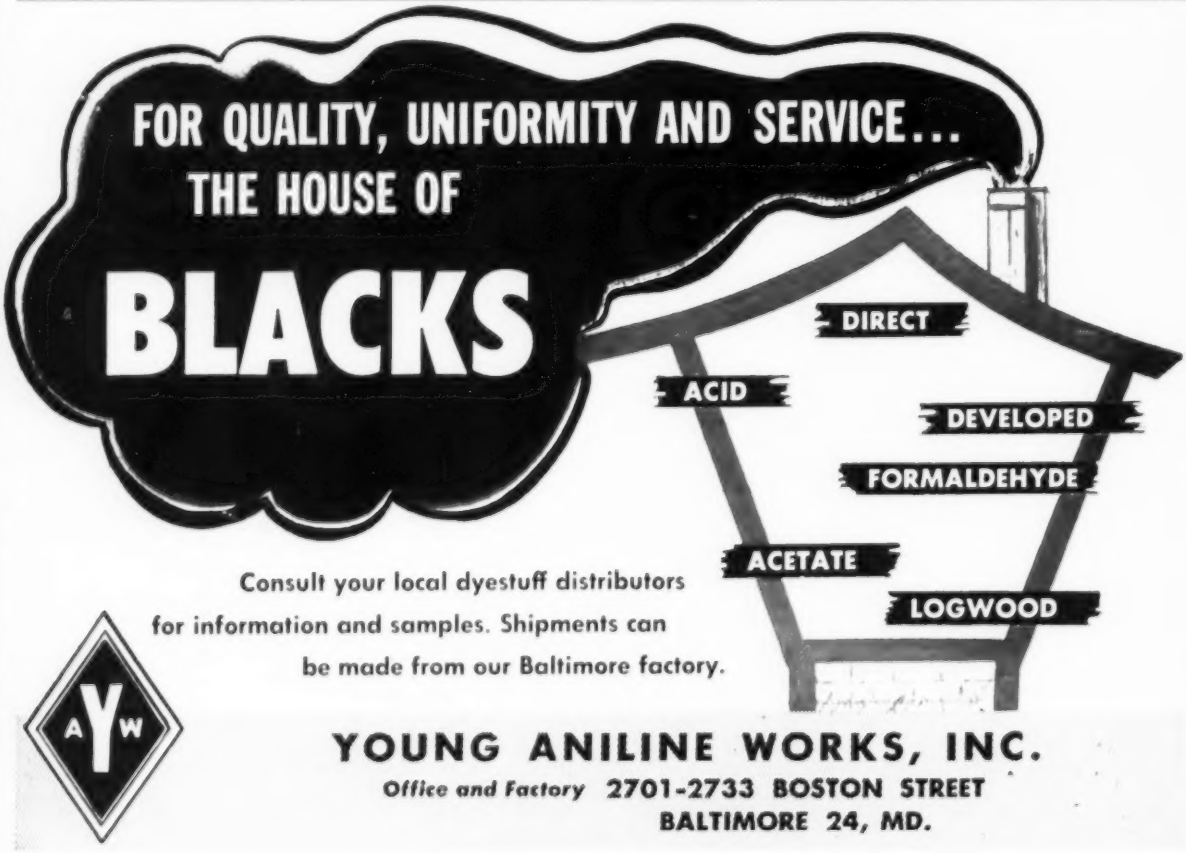
In use, the yarn passes between two conical aluminum rollers, the amount being regulated by rack wheels.

Underwood & Perry, 94A Cyprus Rd., Leicester, England.

Do you want more data? Write ◆ or use card on page 233; list B-129

How to cut battery hand costs 50%

The filling box stacker for the Foster-Muschamp Model 66 automatic filling winder reduces battery hand costs by an estimated 50% over conventional trucks or buggy systems. Supplied as optional equipment, the



stacker is designed for use with spun yarns.

The bobbins are doffed automatically, conveyed to and placed in a filling box under each winder spindle. The bobbins are placed in the box in parallel order with all the butt ends on one side of the box.

An automatic lint cleaning attachment, a traveling device, is also available as optional equipment for this winder. It is designed to remove lint, nips, and fly that are present during the winding of spun yarns.

Foster Machine Co., Westfield, Mass.

Do you want more data? Write ◆ or use card on page 233; list B-130

Picker has automatic doffer

An attachment which doffs the picker automatically and pieces up the end without interfering with production is now available on new Tweedales & Smalley pickers of 37½", 40½" and 45½" widths. The doffing cycle is completed in only seven seconds.

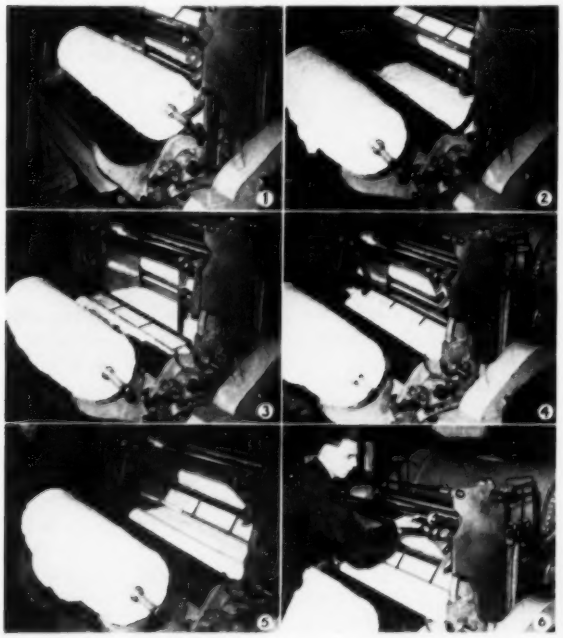


Photo 1. The completed lap is being discharged into the cradle. Hooks in the rack heads are ready to pick up the new lap pin from its storage position.

Photo 2. The cotton flows forward over the fluted lap rolls while the lap pin is carried downward by the racks.

Photo 3. The spring loaded sweep has moved into position ready to fold back the leading edge of the sheet of stock.

Photo 4. The sweep moves sharply backwards and folds in the leading edge of the sheet.

Photo 5. While the building of the new lap proceeds, the operator removes the lap pin from the lap just completed.

Photo 6. After removal, the lap pin is placed in its storage position ready for the next doffing cycle.

Some of the advantages offered by the system are: higher production from no doffing down time; greater lap uniformity in the first and last yards of the lap; and simplified maintenance through pressure lubrication.

Tweedales & Smalley Ltd., Castleton, Rochdale, England.

Do you want more data? Write ◆ or use card on page 233; list B-131

UNCONDITIONAL GUARANTEE
If this Housing ever Breaks or Distorts we will replace it Free.
THE RIDGE TOOL CO.
ELYRIA, O
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there's Only one

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SOUTH CAROLINA

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Traveling out of Clinton, S. C., Mike specializes in spinning room items. He travels South Carolina only so as to give his customers good service. When you need something, call Mike at Clinton. If he's not hunting or fishing, he'll come see what you want. He's a good boy. In addition to our tough aprons he has:

Textile Bobbin Works
H & P Spool & Bobbin Co.
Marquette Spindles
Hygrolit Machines and conditioning liquids

A quality fellow with quality lines

RUSSELL A. SINGLETON & SONS

Blanco, Texas

P. S. We don't mind his hunting and fishing. After all, he gave up golf.

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Equipment briefs

A picker stick attachment, which is designed to increase picker stick life by preventing splitting of the stick at the point where it is attached to the rocker assembly, has no floor spring and permits power adjustments to be made with a small wrench.

Loomfixers Loom Works, Box 527, Baltic, Conn.

Do you want more data? Write supplier or use card on page 233; list B 201

Drying oven conveyor chains can be lubricated with No. 49 light oil without fear of oil carbon deposit contamination from the high temperatures. The oil has withstood baking in ovens for 72 hours at 300 F without giving a trace of carbon residue. The oil is also recommended for use on air compressors and other similar machines operating in hot, cold, wet, or chemically contaminated atmospheres.

Keystone Lubricating Co., 3100 N. 21st St., Philadelphia, Pa.

Do you want more data? Write supplier or use card on page 233; list B 202

A loom upright shaft clutch which features sturdy components to offset wear is adjustable without disconnecting the upright shaft. A knob in the side of the clutch is turned to disengage the clutch, which is then turned either way to set the shaft in time with the head motion.

Loomfixers Loom Works, Box 527, Baltic, Conn.

Do you want more data? Write supplier or use card on page 233; list B 203

A tension meter annunciator flashes a light when tension in a controlled system is exceeded or drops too low. The meter is adjustable between limits, operates on 115 volts, and is easily installed.

Tensitron, Inc., Harvard, Mass.

Do you want more data? Write supplier or use card on page 233; list B 204

A three-dimensional field of view for counting, inspecting, examining, etc., is given by the Stereo Microscope which provides up to 3" working distance, and gives sharp, upright images which are correct from right to left. Two sets of objective lenses are provided on a rotating turret; a standard pair of wide-field eyepieces provide 21 and 34 power magnifications. Additional eyepieces are available for greater or lesser magnification.

Edmund Scientific Co., Barrington 17, New Jersey

Do you want more data? Write supplier or use card on page 233; list B 205

Conveyor slats are attached easily to a conveyor chain which has a wing attachment on each link especially to receive such members. The pin-type chain, made of forged quality steel and heat treated, can be furnished for acid or heat conditions. Links need not be matched, and are available in standard pitches. Easy to take apart and assemble, can be used in multiple or single strands, and can be furnished along with complete conveyor aprons and sprockets.

Robert A. Main & Sons, Inc., 257 Pascack Rd., Paramus, N. J.

Do you want more data? Write supplier or use card on page 233; list B 206

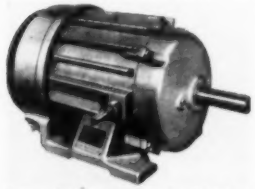
Taper-locked roller chain sprockets require no reboring or other machining for installation on shafts. The sprockets, together with bushings, are mounted directly on the shaft without keyseating, set screw machining, etc., to provide the equivalent of a shrink fitting regardless of whether the shaft is turned and ground, or cold rolled, standard, or normally undersized. The sprockets are

available in pitch sizes ranging from one-half inch to one inch, double strand.

Dodge Mfg. Corp., Mishawaka, Indiana

Do you want more data? Write supplier or use card on page 233; list B 207

The Clean-Flo motor is a self-cleaning textile motor of totally enclosed, fan-cooled construction. The cooling system keeps the motor free of lint; the totally enclosed construction prevents lint from entering the interior of the motor. Complete interchangeability with existing NEMA motors is assured. The shaft is brought out through the fan as an alternate construction to allow the motor to be mounted in the aisle but direct the air flow away from the driven machine. Special construction for spinning frame service requiring suspension-mounting and motor-mounted disc brake are also provided.



Louis Allis Co., Milwaukee, Wis.

Do you want more data? Write supplier or use card on page 233; list B 208

Aluminum soldering without flux is accomplished by an ultrasonic soldering iron which removes the oxide film on the metal surface. Made in England by Mullard, Ltd., the iron, Model Number E. 7587 M, applies ultrasonic power, silent sound waves, through the molten solder to the surface of the aluminum or other light metal. A "cold boiling" effect, called cavitation, is produced within the solder. The bubbles remove all oxide film from the metal and permit tinning.

Acoustica Associates, Inc., Glenwood Landing, L. I., N. Y.

Do you want more data? Write supplier or use card on page 233; list B 209

Eliminate fluctuations in steam demands resulting from peak hot water usage by the Iso-Therm hot water heating system. The system is available in two designs: (1) indirect heating element with conventional trapping; and (2) direct injection heater. A constant-average amount of steam, fed into the heater is "offset" by controlled cold water input.

Fred H. Schaub Engineering Co., 2110 S. Marshall Blvd., Chicago 23, Ill.

Do you want more data? Write supplier or use card on page 233; list B 210

A gumming and splitting machine receives tubular knitted fabrics and in one continuous operation applies a gum solution, dries the fabric, splits it in the middle of the gummed area, opens the tubular fabric into flat form, and rolls it. Requiring only one operator, the machine attains speeds of 8 to 15 ypm.

Joseph Pernick Co., Inc., 5418-23 Flushing Ave., Maspeth, L. I., N. Y.

Do you want more data? Write supplier or use card on page 233; list B 211

A floor maintainer that scrubs, waxes, polishes, steel wools, buffs, and shampoos, has a brush diameter of 11", a 1/3 hp motor (constant duty), and interchangeable attachments for all six maintenance jobs. Motor ball bearings are lifetime lubricated; the handle can be locked in

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V. Peter Loftis, Jr., 1404 N. Elam Ave., Greensboro, N. C.
South Carolina Agent, Fred E. Antley, P. O. Box 802 Greenville, S. C.
Georgia-Alabama Agent, John Ferguson, John Ferguson and Associates, Drawer 486, LaGrange, Ga.

any position on a 90-degree arc. Flip-up wheels automatically retract when the weight of the machine is shifted from wheels to brush.

Clark Sanding Machine Co., Muskegon, Mich.

Do you want more data? Write supplier or use card on page 233; list B 212

A suction grease gun which will service gear cases, transmissions, differentials, and other components, or which can be used to transfer any fluid lubricant, is available in 18-oz capacity and with nondrip nozzle and flexible tube.

Lincoln Engineering Co., 5702-15 Natural Bridge Ave., St. Louis, Mo.

Do you want more data? Write supplier or use card on page 233; list B 213

Hot water generators which use oil, gas, or a combination of oil and gas are available in outputs from 670,000 Btu to 6,700,000 Btu, and from 4,467 to 44,667 Gross EDR. Made to handle varying requirements of large or small forced hot water heating systems, singly or in a battery, they are installed by making five simple connections—no foundations, excavation, or instrumentation is necessary. The units operate under a minimum efficiency of 80%.

Cyclotherm Div., National U. S. Radiator Corp., Oswego, N. Y.

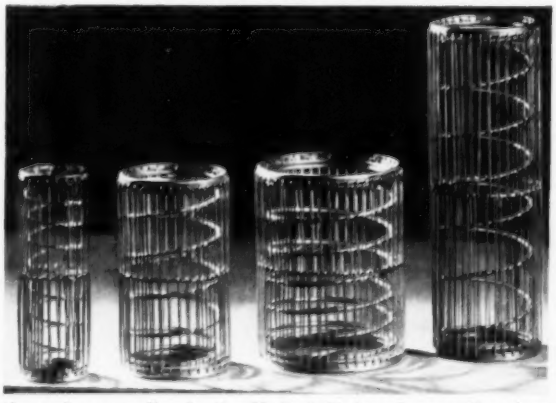
Do you want more data? Write supplier or use card on page 233; list B 214

Air-operated, high-suction industrial cleaners, using compressed air from the plant supply, are available in four models for wet and/or dry applications. Called Vac-U-Max, the cleaners are equipped with covers to fit standard drums (30 or 55 gallons). Depending on air supply, the units will maintain a vacuum powerful enough to lift water 18 feet, or lift any solid object that will pass through the hose.

Vac-U-Max Sales Co., 1 Montgomery St., Belleville 9, New Jersey.

Do you want more data? Write supplier or use card on page 233; list B 215

Scholl Dye Springs, which have a unique design that permits their manufacture in large diameters or long lengths with a minimum increase in cost, are available



through a supplier in the United States. Among the sizes manufactured is one of 1⅝" diameter x 6¾" length.

Parrott & Ballentine Textile Equipment Co., Greenville, S. C.

Do you want more data? Write supplier or use card on page 233; list B 216

Improvements to the Model M Autodinamografo feature a special creel which is detached from the tester and gives a better system of control for the individual threads. A larger, more compact distributor prevents yarn tangling

after the bobbin change. Other features include a new separation plate between the bobbin of the tester and the revolving arm, and a new waste collection system.

Stellite American Corp., 60 East 42nd St., New York 17, N. Y.

Do you want more data? Write supplier or use card on page 233; list B 217

A line of totally-enclosed, air-over-frame motors has been introduced to produce varying horsepower according to the application of varying air velocities. This effect is accomplished by the cooling effect of the air flow over the motor frame created by the fan or blower it powers. Features of the new line include cast iron ribbed frame construction, oversized double-shielded ball bearings, and metermatic lubrication with automatic grease relief. The motors are available in the new NEMA frame sizes from ½ through 30 hp and may be operated on 208-volt network systems.

Reliance Electric & Engineering Co., 1088 Ivanhoe Rd., Cleveland 10, Ohio

Do you want more data? Write supplier or use card on page 233; list B 218

Pneumatic conveyance of cotton or other fibers at high rates of delivery is accomplished by the Shirley Pneumatic Wheel. Completely free from choking difficulties, the unit is extremely light and convenient to install at any point where delivery is required. It can be adjusted to allow the material to flow on and not be delivered.

Tweedales & Smalley, Ltd., Castleton, Rochdale, England.

Do you want more daat? Write supplier or use card on page 23; list B 236

Analysis of streams of chlorine, oxygen, hydrogen chloride, sulfur dioxide (or any process stream that exists as a gas or can be vaporized into a mixture of gases) can be made by the Process Gas Chromatograph. This instrument automatically passes samples of the gas through a packed column of absorbent material which breaks down the mixture into its component parts, and then registers on a graph the per cent of each chemical present.

Beckman Instruments Inc., 2500 Fullerton Rd., Fullerton, Calif.

Do you want more data? Write supplier or use card on page 233; list B 219

Heavy bobby-sox can be packaged and cuffed before removed from the Berrypak-er Model 200, which embodies a radical design from other cardboard hosiery packaging machines. Adaptable to all types and sizes of anklet and knee-length hosiery, stretch nylon, blends, and cottons, the unit is simple in design.

Process Machinery Co., Durham, N. C.

Do you want more data? Write supplier or use card on page 233; list B 220

Flexible heating mats up to 160" in width can be stretched flat, positioned by hand against any single or compound curve, or wrapped around a cylinder or barrel. Without metal sheath barrier to deter heat transmission or radiation, up to 50% savings in power can be realized over existing models. The mats are available in standard widths of 12" to 42", and can be woven in any length to

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Zack Industries, 185 Goffle Rd., Hawthorne, N. J.

Do you want more data? Write supplier or use card on page 233; list B 221

A system of batch measuring and counting uses a measuring wheel to sense the yardage, and an electromechanical counter to record the units measured. In use on automatic winders to record batch totals, the measuring wheel is mounted to detect the yards wound. The information so gained is relayed by wires to the counter (all three panels of which have been preset to read zero) where the results in yards are registered on one of the batch panels and on the panel reflecting the grand total. At the end of the batch the second panel is cut in while the first one stands. The total for the two continues to grow in its respective panel.

B. F. Perkins & Sons, Inc., Holyoke, Mass.

Do you want more data? Write supplier or use card on page 233; list B 222

The level of fluids in tanks, bins, kettles, or furnaces is maintained through the Auto-Level, an automatic sensitive gauge which measures and records, if desired, without physically contacting the material measured. Other advantages offered are: constant operation as opposed to intermittent, accurate measurement up to plus or minus 1/32", simple installation, control flexibility, low cost, and negligible maintenance.

General Glass Equipment Co., 5 South Virginia Ave., Atlantic City, N. J.

Do you want more data? Write supplier or use card on page 233; list B 223

Textile color differences which are barely visible to the human eye can be readily computed by a slide-rule calculator which computes a numerical value for the difference in color between two materials. Three characteristic numbers, known as tristimulus values, are obtained by spectrophotometric analysis of each material. These numbers provide the basic data needed to use the slide rule.

General Electric Co., Schenectady 5, N. Y.

Do you want more data? Write supplier or use card on page 233; list B 224

The Amco portable insert lift makes it no longer necessary to carry inserts from table to table. The lift consists of adjustable pressed steel legs with ball bearing swivel casters and brakes on the front side of the table so that it can be properly positioned without sliding.

American Safety Table Co., Inc., 224 5th Ave., New York, N. Y.

Do you want more data? Write supplier or use card on page 233; list B 225

Greater power and faster operation are features of the 2000-lb capacity Model QC lift truck equipped with pneumatic tires. New optional job attachments (including LP-gas installation) further increase the versatility of the lift which now includes a constant-mesh transmission. The "Load-Grab" clamp is now available with this model.

Hyster Co., 2902 N. E. Clackamas St., Portland 8, Ore.

Do you want more data? Write supplier or use card on page 233; list B 226

The Type BLH fan offers 86% mechanical efficiency in heavy-duty industrial air handling (for total pressures of 6¾" water gauge and up) in Classes 2 through 4. Avail-

able in wheel diameters from 18¼" to 80¾", the fans are designed to offer reduced turbulance at the fan wheels and at the outlets. All fan wheels are safety tested at speeds well above normal.

Buffalo Forge Co., 490 Broadway, Buffalo, N. Y.

Do you want more data? Write supplier or use card on page 233; list B 227

Especially suitable for use in textile inks, nonwoven fabrics, textile backcoatings, sizings, and carpet backing, Chemigum Latex 247 was developed to give improved resistance to discoloration upon exposure to heat or light. The compound is not extremely sensitive to copper and metal ions. Conventional rubber curing systems can be used with the latex when additional tensile strength or solvent resistance is required.

Goodyear Tire and Rubber Co., Chemical Div., Akron 16, Ohio.

Do you want more data? Write supplier or use card on page 233; list B 228

Lauramine RT anionic softener for finishing cotton fabrics may also be used on rayon, wool, and certain synthetics and blends to impart to the fabric a uniform, full-bodied softness, and to provide lubrication for the sewing and cutting operations. Can be used as a top softener on resin-treated goods and on goods to be napped. It assists print goods to resist paste penetration and therefore aids in obtaining brighter colors. Can replace conventional oils wholly or in part in compressive shrinking.

Laurel Soap Mfg. Co., Inc., Philadelphia 34, Pa.

Do you want more data? Write supplier or use card on page 233; list B 229

Control of lap uniformity and accurate printed production records of the check-weighing operation are provided by a cotton lap scale with automatic Printweigh which uses a bull's-eye shutter to conceal the weight from the picker operator until the print has been made. The scales provide a printed record of each lap weight, data from which the total pounds of usable fibers can be determined, a listing indicating the number of good and rejected laps, a basis for measuring the efficiency of picker operators, and a means of identifying in print the picker with the laps it produces.

Toledo Scale Co., Toledo, Ohio.

Do you want more data? Write supplier or use card on page 233; list B 230

For vertical pump installations, a complete line of totally-protected, vertical, solid shaft P-base motors features normal thrust bearings in all sizes from 1 to 40 hp; and high thrust in sizes from 1 to 15 hp. The motors are available in protected, totally-enclosed, or explosion-proof enclosures, and are designed for outdoor or indoor installations.

Reliance Electric and Engineering Co., 1088 Ivanhoe Rd., Cleveland 10, Ohio

Do you want more data? Write supplier or use card on page 233; list B 231

Regulators for control of compressed air, Series 20AG and 20AG-X, extend precise control over their full operating range regardless of wide fluctuations in main line air pressure and widely-varying air flow. Other fea-

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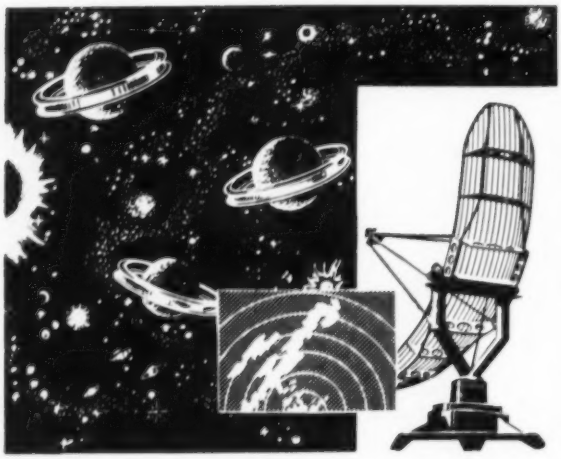

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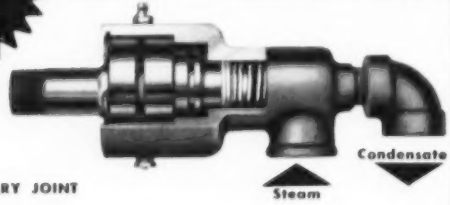

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C. A. Norgren Co., 3400 S. Elati St., Englewood, Calif.

Do you want more data? Write supplier or use card on page 233; list B-232

A portable blueprint machine will reproduce any type of drawing or written matter up to 8½" x 14" in less than 1½ minutes at an approximate cost of 1¢ per copy. The PELprinter "60" is light, compact, can be carried anywhere (weight: 5½ lb), and operates on 110 volts.

Product Engineering Laboratories, Inc., PELprinter Div., 314 Adams St., Newark 5, N. J.

Do you want more data? Write supplier or use card on page 233; list B-233

A totally enclosed, fan-cooled motor (Type GZQ) which permits the fan to be mounted either on the shaft end or on the front end, is designed with a rib-type frame to offer the maximum cooling area to the fan blast which is strong enough to prevent almost all lint and dust accumulation on the motor shell. The bearings are of a sealed, prelubricated, single row, double-width type.

Allis-Chalmers Mfg. Co., 1054 S. 70th St., Milwaukee 1, Wis.

Do you want more data? Write supplier or use card on page 233; list B-234

Get straight and true pipe threads, even on oversize and undersize pipes, by using the new True-Centering Workholder on the Ridgid 65R pipe threader. Also available for existing models, the holder is jam-proof, threads 1" to 2" pipe or conduit with one set of dies, and permits size changes in only eight seconds.

The Ridge Tool Co., Elyria, Ohio.

Do you want more data? Write supplier or use card on page 233; list B-235

New Books

The 1956 edition of the *Technical Manual and Year Book of the American Association of Textile Chemists and Colorists*, containing the only published list of American dyestuffs, plus a complete list of chemical specialties available for textile wet processing, is a 626-page volume divided into seven major sections.

Copies may be obtained from George P. Paine, Executive Secretary, American Association of Textile Chemists and Colorists, Lowell Technological Institute, Lowell, Mass. Prices, postpaid, are: $6.00 per copy to non-members; $5.00 to members for one extra copy; $4.00 to new members in the U. S. and Canada. Elsewhere, these prices are 50 cents higher in each case.

Asbestos, From Rock to Fabric is the result of the author's endeavors to compile for the textile industry a comprehensive text to give the reader a balanced account of the processes by which asbestos is extracted from rock and converted into textiles and similar goods. The work was compiled from a wide range of original papers and patents, and contains 17 chapters (400 pages, including 148 illustrations), the last consisting of statistics relating to the asbestos industry and incorporating a directory of asbestos merchants in Britain, the United States, Canada, and South Africa. In addition to the general index there is a Patent Index. Throughout the work full reference is given, and summaries of important patents appear in the appropriate sections. Copies are available from The Textile Institute, 10 Blackfriars St., Manchester, England. Price: $7.75.

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HELPFUL BOOKLETS FREE!

2-1 QUATERNARY AMMONIUM SALTS. Booklet gives chemical and physical characteristics of these cationic surface active agents along with applications and formulations. Write Armour & Co., Chemicial Div., 1355 W. 31st St., Chicago 9, Ill.

2-2 "THICK AND THIN" RAYON. Characteristics, uses and processing conditions of Du Pont's continuous filament, novelty yarn. Includes pictures. Write Textile Fibers Dept., E. I. du Pont de Nemours & Co., Inc., Wilmington, Delaware.

2-3 SOLVAY ALKALIES AND CHEMICALS. Book contains detailed information on the entire line of Solvay Alkalies and Chemicals. Tells uses, markets, properties, etc. Write Solvay Process Div., Allied Chemical & Dye Corp., 61 Broadway, New York 6, N. Y.

2-4 MOUNTS FOR LOOMS. Bulletin describes how vinyl mount with deep serrations and semi-soft gripping surfaces eliminates the need for bolts or paste. Write Clark, Cutler, McDermott Co., 106 W. Central St., Franklin, Mass.

2-5 LP-GAS FOR LIFT TRUCKS. Specification sheets show how L-P Gas fuel systems increase engine life, lower oil and fuel costs and minimize indoor fume problems. Write Hyster Co., 2902 E. Clackamas St., Portland 8, Oregon.

2-6 CARE AND FEEDING OF RUBBER ROLLS. Handy table lists faults and causes of faults commonly found in rubber rolls, together with recommended treatments. Write Rodney Hunt Machine Co., Orange, New Jersey.

2-7 PROCTOR SUPER PICKER. Data sheet gives details of the Proctor Super Picker for use on slabs of baled cotton, or wool and synthetic blends in layers up to 12" thick. Write Proctor & Schwartz, Inc., 7th St. and Tabor Rd., Philadelphia 20, Pa.

2-8 RAILWAY SEWING MACHINE. Circular describes Birch Brothers 20 ft. Railway Sewing Machine with Union Special Head for heavy fabrics such as tufted carpets. Write Birch Brothers, Inc., 32 Kent St., Somerville 43, Mass.

2-9 SYNTHETIC LATEX POLYMERS. Reprint of papers presented at Technical Seminars on history, composition, uses of latex compounds. Includes formulas for various uses. Write Goodyear Tire and Rubber Co., Chemical Div., 2755 Piedmont Rd., Atlanta 5, Ga.

2-10 VATROLITE. Data sheet describes improved Vatrolite, a specially concentrated, granular form of sodium hydrosulphite. Wide textile applications noted in vat dyeing and color stripping. Write Royce Chemical Co., Carlton Hill, N. J.

2-11 OXIDATION OF VAT AND SULPHUR DYES. Booklet presents typical procedures for oxidation of vat dyes with hydrogen peroxide or sodium perborate, and sulfur dyes with ammonium persulfate. Write Becco Chemical Div., Food Machinery & Chemical Corp., Station B, Buffalo 7, New York.

2-12 FACTS ABOUT LUREX. Booklets contain information on Dyeing Lurex in various blends, give various types of Lurex, properties and tell how to twist, wind and quill it. Write The Dobeckmun Co., 3301 Monroe Ave., Cleveland, Ohio.

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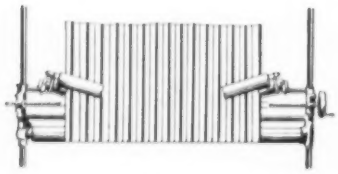

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R-3 CARD GRINDING INFORMATION — Outlines care of grinders, instructions on speed to run grinders, amount of oil to add to machine and other pertinent information. — R. S. ROY & SON CO., Worcester, Mass., and Charlotte, N. C.

R-4 CARD CLOTHING — 8-page booklet by Benjamin Booth Company describes Strip O-Matic Card Clothing and its advantages. — BENJAMIN BOOTH COMPANY, Allegheny Avenue & Janney St., Philadelphia, Pennsylvania.

R-5 VERSA-MATIC DRAWING FRAME — Story on how drafting elements in the Versa-Matic possess a high degree of fiber control so that with 44 doublings it is possible to obtain sliver, roving, and yarn of excellent quality. — SACO-LOWELL SHOPS, 60 Battery march St., Boston, Mass.

R-6 THE SARGENT OPENER — Pamphlet describes opener, with rotary evener and stripper, which is designed for automatic quality production and features rugged construction. — C. G. SARGENT'S SONS CORP., Graniteville, Mass.

R-7 BALL BEARING COMB BOXES — Southern States Equipment Corp. offers literature on their famous C-1 Ball Bearing Comb Boxes. Description, working principle, cut-away views shown. — SOUTHERN STATES EQUIPMENT CORP., Hampton, Ga.

R-8 FEATHERTOUCH DRAFTING — Booklet describes in detail with pictures the most uniform drawing, the strongest drawing with the highest production per frame at the lowest cost. — IDEAL INDUSTRIES, INC., Bessemer City, N. C.

R-9 AUTOMATIC WEIGHING FEEDERS — New booklet shows how the Dodenhoff Tandem Weighing Feeder produces webs, mats and felts of continuing accuracy. Application on nonwovens, carpet yarns, long staple synthetics, woolens and cotton. — W. D. DODENHOFF CO., INC., Box 178, Greenville, S. C.

R-10 SRRL OPENER, SCREW CONVEYORS — Information available on Continental Gin Company's SRRL Opener. Also complete line of screw conveyors and accessories. — CONTINENTAL GIN CO., Birmingham, Ala.

R-11 FLEXIDYNE INDIVIDUAL CARD DRIVE — Booklet describes operating principles and features of Dodge's new Flexidyne individual card drive. Specifications and prices included. — DODGE MFG. CO., Mishawaka, Indiana.

R-13 TIPS ON CARDING PROCEDURE — Monthly bulletin by Ashworth Brothers includes many useful tips and advice on carding operation, maintenance and care and is available to anyone interested. — ASHWORTH BROTHERS, Fall River, Mass.

R-14 PNEUMASTOP FOR FLY FRAMES — Brochure explains, in terms of dollars and cents, the benefits of having Pneumastop equipped roving frames in the mill. Illustrated to show its operation and several different types of installations. — PNEUMAFIL CORP., Charlotte 8, N. C.

R-15 ADVANTAGES OF ALDRICH PICKERS — Fold-out brochure describes various aspects of the Aldrich picker in detail. Comprehensive pictures, good technical text. — ALDRICH MACHINE WORKS, P. O. Box 750, Atlanta, Ga.

R-16 UNIVERSAL CARD COILER — Booklet gives details on the McDonough Universal Card Coiler, enumerating 12 important reasons why its the best available. Dimensions included. — McDONOUGH POWER EQUIPMENT, INC., McDonough, Ga.

R-17 NEW CONDENSER TAPE — Literature by Benjamin Booth describes newly introduced SUPER-TAPE, an impregnated fabric condenser tape. Shows actual sample of tape and gives complete prices. — BENJAMIN BOOTH CO., Allegheny Ave. & Janney St., Philadelphia 34, Pa.

R-18 COILERS AND CONVERSIONS — New color booklet describes Southern States' new complete coilers and conversions for cards. Features mechanical and operating characteristics with pictures of inside construction. — SOUTHERN STATES EQUIPMENT CORP., Hampton, Ga.

R-19 84" WOOLEN CARD — Colored picture of the Davis & Furber 84" woolen card, suitable for mounting. Has floor plan, description, and technical details on reverse side. — DAVIS & FURBER MACHINE CO., North Andover, Mass.

SPINNING—TWISTING—WINDING—SPOOLING—WARPING—THROWING

R-101 SPINNING NEWS — Literature in newspaper format gives news on spinning equipment manufactured by Roberts Co., in concise, readable form. — ROBERTS CO., Sanford, N. C.

R-102 PLASTIC BOBBINS — Booklet tells the way in which Engineered Plastic's plastic bobbins improve quality and efficiency in production. — ENGINEERED PLASTICS, INC., Gibsonville, N. C.

R-103 DAYTON PRODUCTS FOR SPINNING AND WEAVING — Illustrated booklet describes natural and synthetic rubber products for textile machinery. Complete line, applications, advantages shown. — DAYTON RUBBER CO., TEXTILE DIV., Dayton, Ohio.

R-105 SPINDLE OIL — Color brochure describes "Gulfspin," showing how it insures against excessive wear in cast iron bolsters and provides freedom from spindle wobble. — GULF OIL CORPORATION, Gulf Bldg., Pittsburgh, Pa.

R-107 THRU-DRAFT CREELS — Brochure describes the Roulligny Tru-Draft Umbrella Creel as easy to install, adaptable to all frames, completely adjustable, etc. — THE BOULIGNY CO., P. O. Box 2115, Charlotte, N. C.

R-108 HIGH SPEED AUTOMATIC QUILLER — Color booklet describes the Schlafhorst "Autoconer," listing its advantages and giving dimensions. — TERRELL MACHINE CO., INC., P. O. Box 928, Charlotte, N. C.

R-109 MOTOR CONTROL — Brochure gives description and engineering data on the Cutler-Hammer Motor Control for roving and spinning frames. Users listed and advantages discussed. — CUTLER-HAMMER, INC., Milwaukee, Wis.

R-110 STOP FRAME ON ROVING FAILURE — Adamstop instantly detects all roving failures and stops frame. Booklet tells how many installations have increased b/b assignments as much as 25% to 100%. — ADAMS, INC., 209 East Stone Ave., Greenville, S. C.

R-111 AUTOMATIC COP WINDER — How high production with less labor is secured in the Lazenby Model A-54 Automatic Cop Winder is described in booklet. No slow-down or stopping of the winding spindle for doffing. — E. A. LAZENBY CO., 3106 Elm Ave., Baltimore 11, Md.

R-112 BAHNSON PACKAGED MODERNIZATION—New brochure gives details on Bahnson's complete system, including Collecto-Vac, Open-Aire Creels, Cross-Jet Cleaner, Air Conditioning. — BAHNSON CO., Winston-Salem, N. C.

R-113 REINER WARPER — Full width and sectional warpers for all requirements in the knitting and weaving industry fully described in recent catalog. — ROBERT REINER, INC., Weehawken, N. J.

R-114 CONICAL RINGS AND FLYERS — Special data available on the Herr conical rings and flyers. — HERR MANUFACTURING CO., INC., 318 Franklin St., Buffalo 2, N. Y.

R-115 PRECISE WIND MACHINE — Form A-92 describes the Foster Model 75 widely used for winding weights of pineapple cones and tubes of rayon, nylon and other filament yarns. — FOSTER MACHINE COMPANY, Westfield, Mass.

R-116 AUTOMATIC CLEANING EQUIPMENT — Complete booklet by American Monorail shows working details and advantages of the Tri-Rail Cleaner, a great improvement over the original unit. — AMERICAN MONORAIL CO., 13107 Athens Ave., Cleveland 7, Ohio.

R-117 ALUMINUM SECTION BEAMS — Information available on advantages of Hayes beams. Includes prices and delivery schedules. — HAYES INDUSTRIES, INC., Jackson, Mich.

R-118 LUBRICANTS FOR TEXTILES — Working samples available of Ben Boy Bearing Lubricants, Spindle Oils, Non-Melting Oils, Twister Lubricants. — GEORGIA CAROLINA OIL CO., Box 101, Macon, Ga.

R-119 CUSTOM MADE THREAD GUIDES — Color brochure describes complete line of American Lava Company's thread guides. Composition, properties, specifications of all designs included. — AMERICAN LAVA CORPORATION, Chattanooga 5, Tenn.

R-120 SPINNING FRAME CONVERSIONS — Information available on how to get new frame results and big package economy at half the cost with Meadows Conversions. — MEADOWS MFG. CO., Station A, Atlanta, Ga.

R-121 COLLECTO-VAC — Catalog 30A describes Bahnson's new development, "Collecto-Vac" for collecting lint, fly and broken ends. — THE BAHNSON CO., Winston Salem, N. C.

R-122 STATIC ELIMINATOR FOR WARPERS - SLASHERS - CREELS — Booklet tells how use of Chapman Static Eliminators will insure increased production, improved quality and reduced waste by complete elimination of static. — THE PORTLAND CO., 22 Fore St., Portland, Maine.

R-123 SPINNING AND TWISTER RINGS — Catalog and price list now available on Whitinsville "Diamond Finish" spinning and twister rings. Complete details and pictures. — WHITINSVILLE SPINNING RING CO., Whitinsville, Mass.

R-124 DOUBLE DECK TWISTERS — Bulletin describes Jumbo (8 oz. to 16 oz. headless or take-up spool packages) and Acme (up to 10 oz. packages) models for high speed twisting of silk, rayon, nylon, etc. to finest deniers. — U. S. TEXTILE MACHINE CO., Scranton 8, Pa.

R-125 PNEUMAFIL LINT-FREE CREEL — Color booklet describes the new Airfoil Design Pneumafil type LFC with Built-In Lint-Free Creel. Gives complete details and pictures. — PNEUMAFIL CORPORATION, Charlotte 8, N. C.

R-126 PRECISION GEAR BULLETINS — Now available from Precision Gear are bulletins on machinery products for cleaning and picking, roving, frames, spinning and twisting, and a general catalog on gears. — PRECISION GEAR & MACHINE CO., 2001 N. Tryon St., Charlotte 2, N. C.

R-127 HEADLESS PACKAGE TWISTER ELIMINATES REDRAWING — Literature shows high-speed Face Drive Twister for accurately building tapered or straight-end headless packages which go directly to quilling or warping without redrawing. — U. S. TEXTILE MACHINE CO., Scranton 8, Pa.

R-128 PNEUMAFIL SUCTION CLEANING SYSTEMS — Booklet describes types of Pneumafil Systems, gives details of new Collector Unit Model C-4. New type LFC Pneumafil is also discussed. Diagrams, comparison charts and installation pictures included. — PNEUMAFIL CORP., Charlotte 8, N. C.

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R-129 FACTS ABOUT YOUR FLYERS AND SPINDLES — Booklet by Ideal Machine Shops shows how smooth flyer and spindle operation can help produce higher and more efficient output, good quality yarn, minimum wear, and larger bobbins. — IDEAL MACHINE SHOPS, Bessemer City, N. C.

R-130 TWISTING MACHINERY — Bulletin gives outstanding features, specifications, facts and useful information on Novelty Yarn Twisters for Cotton, Silk, Worsted and Rayon Yarns. — COLLINS BROTHERS MACHINE COMPANY, 647 Roosevelt Ave., Pawtucket, Rhode Island.

R-131 AUTOMATIC CLEANING AND OVERHEAD HANDLING FOR TEXTILE MILLS — 24 page bulletin describing the American MonoRail Automatic Cleaner for preventing accumulation of lint on spinning, twisting, winding machines. Also for cleaning monitors and card room ceilings. — THE AMERICAN MONORAIL CO., Cleveland, Ohio.

R-132 TRAVELING CLEANERS — 4-page bulletin describes the Improved Parks-Cramer Frames and Room Cleaners including the Underframe and Floor Sweepers. — PARKS-CRAMER CO., Fitchburg, Mass.

R-133 LAPLESS ENDLESS SPINNER — Bulletin and full information will be supplied on lapless endless spinner and coning belting. — TON-TEX CORPORATION, 31 Columbus Ave., Englewood, N. J.

R-134 SERVICE FOLDER — Folder covers textile metal products including spinning and twisting cylinders, card screens, etc. — JENKINS METAL SHOPS, INC., Gastonia, N. C.

R-135 WORSTED SPINNING — Bulletin explaining and illustrating Saco-Lowell's new system for worsted spinning, from top to yarn in five economical and efficient stages. — SACO-LOWELL SHOPS, 60 Batterymarch St., Boston 10, Mass.

R-136 THE BRIEF SAGA OF THE RING TRAVELER — An interesting history relative to the ring traveler which is in reality the basis of the spinning frame. John Thorpe's invention of ring traveler, the development of the spindle, and the invention of Rabeth's Bolster type spindle are covered. — NATIONAL RING TRAVELER CO., Pawtucket, R. I.

R-137 TEXTILE APRONS — Illustrated folder showing the steps in manufacture of genuine leather aprons for all types of long draft spinning and card room machinery. — TEXTILE APRON COMPANY, East Point, Ga.

R-138 WARPER BEAMS — Folder describes the high speed warper beams for rayon tire cord and cotton, cast aluminum end supports and large diameter heads. — U. S. BOBBIN & SHUTTLE CO., Lawrence, Mass.

R-139 SPINDLE OILING MACHINE — Information available on new Spindle Oiling Machine. Features include filter system to clean oil for re-use; smaller size for narrow aisles. — WICACO MACHINE CORP., 4800 Stenton Ave., Wayne Junction, Philadelphia 44, Pa.

R-140 GREASE-SEALED, ANTI-FRICTION ROLLS Booklet contains description and engineering drawings of the Cole grease-sealed, anti-friction rolls. Also contains information on four apron controlled drafting units. — COLE ENGINEERING CORP., P. O. Box 153, Columbus, Ga.

R-141 HANDY REFERENCE TABLES — Folder showing spinning traveler speeds, sizes of ring flanges, etc. — VICTOR RING TRAVELER CO., Providence, R. I., and Gastonia, N. C.

R-142 UNIRAIL UPTWISTER — Bulletin describes Universal Winding's headless package or bobbin take-up Unirail Uptwister which gives higher yarn quality and better packages at faster speeds and lower costs. Well illustrated with advantages discussed. — UNIVERSAL WINDING COMPANY, P. O. Box 1005, Providence, R. I.

R-143 VACUUM SCAVENGER SYSTEM — Color bulletin by Spin Sa Vac describes application of their vacuum system to drawing, roving and spinning processes for the removal of broken ends, fly or sliver. Complete diagrams and photos of typical installations. — SPIN SA VAC CORPORATION, 1458 South Tryon St., Charlotte, N. C.

R-144 PRECISION TEXTILE WINDING — Bulletin on Riddle Tensions and Density Control for winding rubber cores. — KIDDE MFG., 35 Farrand St., Bloomfield, N. J.

R-145 ROLLER BEARING SPINDLES — Illustrated booklet showing various types of Marquette Roller Bearing Spindles. The unique full floating footstep bearing is pictured in cut-away views, and its advantages are described. — THE MARQUETTE METAL PRODUCTS CO., 1145 Galewood Ave., Cleveland, Ohio.

R-146 CONE WINDER — Form A95 describes the Foster Model 102 winder which produces the Foster knitting cone for spun yarns, warping cones and tubes for dyeing and twister supply. — FOSTER MACHINE COMPANY, Westfield, Mass.

R-147 SHORT CUT TO STAPLE FIBER SPINNING — Color brochure shows the ten steps in operation of the Turbo Tow Stapler, gives technical details and diagrams. — TURBO MACHINE COMPANY, Lansdale, Pa.

R-148 WEAVER'S KNOTTER — A catalog on the Boyce Weaver's Knotter giving a few instructions as to its use, recommendation as to the proper type knotter for the various types of yarns, and the spare parts that go to make up the knotter. — A. E. CARTER, INC., Gastonia, N. C.

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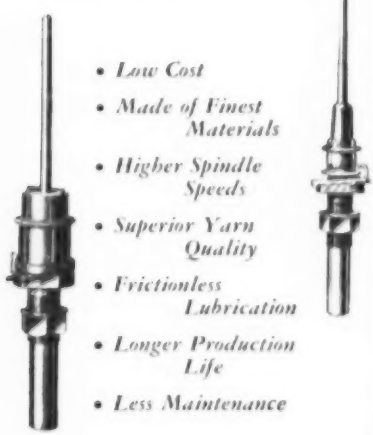

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R-149 TEXTILE ROLL COVERINGS AND MILL SUPPLIES — Color booklet by Armstrong shows and describes their complete line of textile roll coverings, including also loom supplies, mill supplies, roll covering for cotton, silk and synthetic and woolen and worsted systems. An excellent guide book. — ARMSTRONG CORK CO., Industrial Div., Lancaster, Pa.

R-150 LINT-FREE MOTOR — Motor for constant speed a-c driven pickers, roving frames, spinning and twisting frames and winders operating in lint-laden atmosphere described in bulletin. — WESTINGHOUSE ELECTRIC CORP., P. O. Box 2278, Pittsburgh 30, Pa.

R-151 TAPE FOR DRIVING SPINDLES — Booklet, including sample, describes new banding for spindle drives on twisting, roving, and spinning frames. — BENJAMIN BOOTH CO., Allegheny Ave. & Janney St., Philadelphia 34, Pa.

R-152 GIANT ALUMINUM COTTON BEAMS — Information on new 38 x 54" section beams for cotton and other spun yarns. Does work of two 28" beams. Saves handling time. — HAYES INDUSTRIES, INC., Jackson, Mich.

R-153 WOOLEN SPINNING FRAME — Colored picture of the Davis & Furber Simplex woolen spinning frame suitable for mounting is available. Technical details on floor plan ranges, sizes, etc., on back. — DAVIS & FURBER MACHINE CO., North Andover, Mass.

SLASHING—WEAVING—CLOTH ROOM—TUFTING

R-201 LOOMS — An accordion type folder is available entitled "Unfolding to You the World's Largest Line of Looms." Information on all types fully discussed. — CROMPTON & KNOWLES LOOM WORKS, Worcester 1, Mass.

R-202 COUNTING AND MEASURING DEVICES— Condensed textile catalog illustrating and describing pick counters, hank counters, cut meters, measuring counters. Wide range of counting devices for production recording on all types of textile machinery. — VEEDER-ROOT, INC., Hartford, Conn.

R-203 LOOM SUPPLIES — Literature describing complete line of straps, strapping, pickers, dobby cords, sticks, binders, bumpers, brake lining and allied products. — E. H. JACOBS, NORTHERN DIV., THE BULLARD CLARK CO., Danielson, Conn.

R-204 INNOVATION IN TEXTILE DRYING — Booklet by J. O. Ross gives details on Steam or Gas "Hot Air" Slasher for high speeds at low cost. — J. O. ROSS ENGINEERING CORP., 444 Madison Ave., New York 22, N. Y.

R-205 SLASHING HINTS — A 20-page booklet offering helpful hints on warp sizing. Subjects: Size cooking equipment, section beam tension, sizing selvages, cooking, use of split rods, weighing for the mix, tips on cooking equipment, storage in kettles, etc. — SEYDEL-WOOLLEY & CO., 748 Rice St., N.W., Atlanta, Ga.

R-206 LOOM PRODUCTION CHARTS — Convenient celluloid card showing yards per loom per week of 40 hours at various loom speeds. — RALPH E. LOPER CO., Greenville, S. C.

R-207 ALUMINUM BEAMS — Catalog No. 1-21 describes Hayes magnesium and aluminum specialties for the textile industry. Illustrates this company's beams that are one-third the weight of conventional types. — HAYES INDUSTRIES, INC., Jackson, Mich.

R-208 THE STORY OF STARCHES — Semi-technical booklet tells the story of starches and information on how they are produced, the creation of new specialty starches, the unique "man-made" starch derivatives, and the handling of starches. — NATIONAL STARCH PRODUCTS, INC., 270 Madison Avenue, New York 16, N. Y.

R-209 LOADING SYSTEM — Bulletin 417, on pneumatic loading system for Saco-Lowell slasher size box squeeze rolls, contains installation photo, features, specifications, and prices. — THE FOXBORO COMPANY, Foxboro, Mass.

R-210 HELP ON SIZE PROBLEMS — Information from Southern Sizing Company outlines how their "superior sizing compounds and superior service can help make your mill run better. — SOUTHERN SIZING CO., East Point, Ga.

R-211 STEEL WARP BEAMS — 20-page Catalog No. 45 illustrating Standard and Special Purpose Warp Beams for the weaving industry, both broad-loom and narrow fabrics. Also Textile Machinery Specialties. — MILTON MACHINE WORKS, INC., Milton, Pa.

R-212 PENFORD GUMS IN TEXTILES — Brochure tells how the wide range of viscosities and the excellent properties of Penford Gums make them desirable for warp sizing spun yarns. — PENICK & FORD, LTD., INC., 420 Lexington Ave., New York 17, N. Y.

R-213 SACO-LOWELL POSITROL SLASHER — Color brochure gives 14 advantages of the Saco-Lowell Positrol Slasher. Includes photographs, cut-away drawings, sectional pictures, diagrams, photomicrographs. — SACO-LOWELL SHOPS, 60 Batterymarch St., Boston 10, Mass.

R-214 ROTARY UNIONS — New catalog shows how to cut costs, get better sealing on can dryers, slashers, calenders, etc. Catalog No. 500 entitled "Where Good Connections Count." — PERFECTING SERVICE COMPANY, 332 Atando Ave., Charlotte, N. C.

R-215 WEST POINT'S HOT AIR SLASHER — Bulletin describes advantages and capacities of new hot air slasher by West Point Foundry and Machine Co. Detailed specification included. — WEST POINT FOUNDRY AND MACHINE CO., West Point, Georgia.

R-216 AIR SLASHER DRYER — Pamphlet by Proctor & Schwartz shows construction and operating details of the Proctor Air Slasher Dryer. Advantages listed and cut-away view shown. — PROCTOR & SCHWARTZ, INC., 7th St. and Tabor Rd., Philadelphia 20, Pa.

R-217 BUTT-TACKING SEWING MACHINE — Booklet describes an operating installation of the Merrow single thread butt tacking sewing machine. Gives performance data, and advantages of butt-tacking. — THE MERROW MACHINE COMPANY, 28 Laurel Street, Hartford, Conn.

R-218 LOOM REED BOOKLET — Pamphlet describes in detail the following reeds: All Metal Reeds, Pitch Band Reeds, All Metal Spring Baulk Reeds, All Metal Plush Reeds, All Metal Ribbon Reeds, and special Reeds for Warner & Swasey Looms. — STEEL HEDDLE MFG. CO., 2100 West Allegheny Ave., Philadelphia 32, Pa.

R-219 BOOKLETS ON COCKER CUSTOM BUILT EQUIPMENT — Six new bulletins available from Cocker include information on the high speed Warp Sizer, high speed Beam Warper, Cocker Creels and Tensions, Beam Back-Winders, Indigo Dyeing Ranges, Kettles, T-Boxes, etc. — COCKER MACHINE & FOUNDRY CO., Gastonia, N. C.

R-220 NOPCO CHEMICAL DATA SHEETS — are available on Nopcostats, Nopco Sizes N and D, Important Points in Warp Sizing, Interpretation of Analysis, Wetting Agents, Balanced Wool and Worsted Oils, Acetate Warp Sizing, Viscose Warp Sizing, Rayon Soaking. — NOPCO CHEMICAL CO., Harrison, N. J.

R-221 ALIGNING LAYS — Informative booklet gives setting instructions for aligning lays. Complete treatment, including step-by-step drawings. — DRAPER CORPORATION, Hopedale, Mass.

R-222 BALING PRESSES — An illustrated folder describing this manufacturer's complete line of balers for all materials. Both downstroke and upstroke models. — ECONOMY BALER CO., Ann Arbor, Mich.

R-223 COBBLE TUFTING MACHINES — Literature available on Cobble Tufting Machines with Automatic Pattern Attachments shows how these machines open up new vistas to tufting industry. — COBBLE BROS. MACHINERY CO., INC., River Road, Chattanooga, Tenn.

R-224 AMCO HELICLONE LOOM CLEANER — Booklet shows how Amco Helicione Loom Cleaners have made obsolete the time consuming job of cleaning looms manually with an air hose. — AMERICAN MOISTENING CO., Providence, R. I.

R-225 HERMAS TEXTILE MACHINES — Selection includes brochures on Unwind Stand, Automatic Guiding Unit, Jet Mixer, Selvage Trimming, Cloth-room Machinery. — HERMAS MACHINE CO., Hawthorne, N. J.

R-226 PREVENTION OF FABRIC DISTORTION— How to eliminate fabric distortion and where to check for fabric distortion are discussed in new bulletin. Entire fabric processing operation is reviewed. — MOUNT HOPE MACHINERY CO., 15 Fifth St., Taunton, Mass.

R-227 FORMULAS FOR SLASHING ARNEL — 10 new formulas for slashing Arnel, bringing the total to 16, are contained in bulletin, which also includes information on warping, weaving and quilling of Arnel. — TEXTILE SALES DEPT., CELANESE CORP. OF AMERICA, P. O. Box 1414, Charlotte 1, N. C.

R-228 THE RANDOM WEB PROCESS — Bulletin No. 101 describes the Rando-Webber and Rando-Feeder machines, and discusses the origin and development of the Random Web process which produces a non-oriented web suitable for processing into felts, wadding, heavy mats and non-woven fabrics on a continuous basis. Engineering data and cut-away diagrams. — CURLATOR CORPORATION, TEXTILE DIVISION, 504 W. Commercial St., East Rochester, N. Y.

R-229 QUICK CLEAN TEXTILE MOTOR — Details given on design changes on Type GZ totally enclosed, fan cooled motor, which provides the textile industry with a rugged, reliable, lint-free motor. Write ALLIS-CHALMERS MFG. CO., 1126 S. 70th St., Milwaukee, Wis.

R-231 FREE WHEELING EXPANDERS — Pamphlet explains how Mount Hope Expanders eliminate distortion and where they keep fabrics free of distortion. — MOUNT HOPE MACHINERY CO., 15 Fifth Street, Taunton, Mass.

R-232 HYDRAULIC SLASHER DRIVES — Color booklet by Vickers shows how hydraulic drives provide an economical approach to improved slasher operation. Has detailed pictures and enumerates advantages. — VICKERS, INC., 1036 Peachtree St., Atlanta, Ga.

R-233 GATES TEXTILE ACCESSORIES — Handy pocket-size catalog BHM-7, fully illustrated, gives specifications of Gates textile accessories including pickers, lug straps, check straps, cone belts, evener belts, harness straps, take-up roll covering, and others. — THE GATES RUBBER COMPANY, 1001 Broadway, Denver 17, Colo.

R-234 COCKER SLASHERS — Booklet examines the Cocker Slashers from stem to stern, pointing out advantages and giving specifications. Includes allied equipment. — COCKER MACHINE AND FOUNDRY CO., Gastonia, N. C.

HELPFUL BOOKLETS FREE!

R-236 UNIFIL LOOM WINDER — Booklet describes a new concept of filling preparation which needs no quilling area, no quilling labor, no quill hauling, no battery plugging, no stripping area, no stripping labor. Complete operation described. — UNIVERSAL WINDING CO., P. O. Box 1605, Providence 1, R. I.

R-237 HIGH SPEED WARP SIZER — Brochure includes information on a new warp sizer evolved from twenty years' study. Outstanding features and specifications included. — COCKER MACHINE and FOUNDRY CO., Gastonia, N. C.

R-238 TRAVELING LOOM CLEANER — Booklet enumerates advantages of the new Oscillaire which are continuously oscillating air outlets, elongated flexible sleeves, and air jets of extra high velocity. — PARKS-CRAMER CO., Fitchburg, Mass.

R-239 DRAPER REPAIR PARTS CATALOG — Now available is a repair parts catalog for Draper E, K and Modified D looms. Contains illustrations covering all mechanisms and constructions, together with complete listings. — DRAPER CORPORATION, Hopedale, Mass.

R-240 BALING PRESSES — Bulletins available describing this company's line of motor-driven and hydraulic baling presses for finished goods, textile fibers, wool, and waste of all kinds. — LOGEMANN BROTHERS CO., 3150 West Burleigh St., Milwaukee, Wis.

R-241 TEXTILE MACHINERY PARTS CATALOG A 24 page illustrated catalog describing the complete line of Dayco and Thorobred textile machinery parts including Cots, Aprons, Loop Pickers, Lug Straps, etc. — DAYTON RUBBER CO., Dayton, Ohio.

R-243 COUNTING DEVICES — Catalog of Trumeter's complete line of counters for every application where counting, measuring or registering is required. Colored pictures illustrate each application. — TRUMETER COMPANY, 1265 Broadway, New York 1, N. Y.

R-244 SQUIRREL-CAGE LOOM MOTOR — Bulletin describes totally enclosed, non-ventilated, constant-speed motors with ample overload capacity to break in new looms. — WESTINGHOUSE ELECTRIC CORP., P. O. Box 2278, Pittsburgh 30, Pa.

R-245 STATIC BARS — Humorous booklet by Simco illustrates the characteristics of static and how Simco Midgets can overcome the problems involved. — THE SIMCO CO., 920 Walnut St., Lansdale, Pa.

R-246 CARE OF DRAPER SHUTTLES — Booklet tells how longer, trouble-free service may be obtained from Draper Shuttles through proper care. — DRAPER CORP., Hopedale, Mass.

R-247 CLUTCH BRAKE MOTOR FOR DRAPER LOOMS — Bulletin describes integrated clutch brake motor with high inertia rotor, clutch and brake, providing compact power package for driving Draper looms. — WESTINGHOUSE ELECTRIC CORP., P. O. Box 2278, Pittsburgh 30, Pa.

R-248 WARP SIZING — Information available on "Size that Satisfies." — STODGHILL & CO., 716 Ponce de Leon Pl., N.E., Atlanta, Ga.

KNITTING

R-301 THE WILDMAN SINGLE-HEAD FULL-FASHIONED HOSIERY MACHINE — Literature on request from the Wildman Mfg. Co., Full Fashioned Division, Norristown, Pa.

R-302 FORGED HEAD ALUMINUM BEAMS — Bulletin 49-A shows new beam capable of holding high yardage of nylon and rubber warps, with specifications. Also describes permanent mold aluminum tricot and section beams. — MILTON MACHINE WORKS, INC., Milton, Pa.

R-303 THE KIDDE KNITTER — Bulletin describes this newest in Raschel-type warp knitting machines and higher production attained with it. — KIDDE MANUFACTURING CO., INC., 35 Farrand St., Bloomfield, N. J.

R-306 BOOKLETS ON FIDELITY MACHINES — Following booklets available: Fidelity "400," Fidelity Multi-Design Ribber, Fidelity Skein Reelers. — FIDELITY MACHINE CO., 3908-18 Frankford Ave., Philadelphia 24, Pa.

R-307 NEEDLE OIL DOES NOT STAIN — Booklet on "Gulftex 35" non-staining needle oil developed for knitting mills. — GULF OIL CORP., P. O. Box 1166, Pittsburgh 30, Pa.

DYEING—BLEACHING—FINISHING—PRINTING

R-401 SOLVENT DETERGENTS — Revised sixteen-page, illustrated booklet tells how solvent detergents, used without heat, remove carbonized grease and oil and certain types of paint, and provide temporary rust protection after cleaning. — OAKITE PRODUCTS, INC., 126C Rector St., New York, N. Y.

R-402 SONOCO TUBES FOR PACKAGE DYEING Color bulletin describes Sonoco's Dytex tubes for one-time use in standard package dyeing equipment to achieve uniformity. — SONOCO PRODUCTS CO., Hartsville, S. C.

R-403 TEXTILE FINISHING MACHINERY — Folder available from Marshall and Williams Corp. shows excellent photographs of each piece of finishing equipment manufactured by the firm. — MARSHALL AND WILLIAMS CORP., 46 Baker Street, Providence, R. I.

R-404 WATER ANALYSIS — Bulletin includes tables of analytic data, conversion factors, a section on preparation of reagents, indicators and standard solutions, etc. Write Solvay Process Division, Allied Chemical & Dye Corp., 61 Broadway, New York 6, New York.

R-405 HUNTER DYEING EQUIPMENT — Describes fully with diagrams Hunter Model A Dye Becks, Hunter No-Lap Reels, Model S Dye Kettles, Open Width Dye Kettles, Sample Dye Kettles. Bulletin gives specifications of each, also shows actual installations of Hunter equipment. — JAMES HUNTER MACHINE CO., North Adams, Mass.

R-408 HYDROGEN PEROXIDE — New booklet covering the properties, uses and handling of hydrogen peroxide is now available. Illustrated with tables and diagrams, the text covers chemical reactions, handling and storage. Write Adv. and Sales Prom. Dept., SOLVAY PROCESS DIV., ALLIED CHEMICAL & DYE CORP., 61 Broadway, New York 6, N. Y.

R-409 NONIONIC SOFTENER — Booklet lists properties and test procedures for "Emersoft 7700," as well as application data for use in finishing most cottons. — EMERY INDUSTRIES, INC., Dept. 5, Carew Tower, Cincinnati 2, Ohio.

R-410 TO MATCH M-107 KHAKI SHADE — Formula for matching the government's standard M-107 Khaki shade on 10-oz. tropical worsted has just been released. — SANDOZ CHEMICAL WORKS, INC., 61-23 Van Dam St., New York 13, New York.

R-411 INDUSTRIAL CHEMICALS — 24-page booklet listing alphabetically Harshaw industrial chemicals and applications. — THE HARSHAW CHEMICAL COMPANY, 1945 East 97th Street, Cleveland 6, Ohio.

R-412 CATIONIC SURFACE ACTIVE AGENT — Technical bulletin describes Harshaw's Uersoft "D" which produces full, soft hand while acting as an efficient anti-static agent. — HARSHAW CHEMICAL CO., 1945 East 97th St., Cleveland 6, Ohio.

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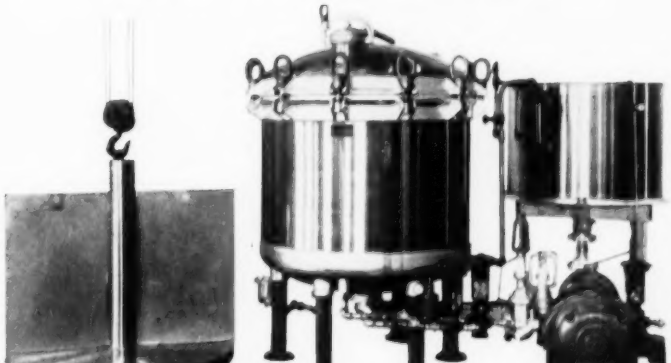

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R-416 SURFACE TENSION DEPRESSANT — The booklet, "Mercerizing and Alkamerce — The Ideal Dry," contains description of a product, which can be used as a wetting agent; a dye leveling agent, a penetrant in package dyeing. — HART PRODUCTS CORP., 1440 Broadway, New York, N. Y.

R-417 ROYCE TEXTILE CHEMICALS — This booklet briefly describes the leading Royce products for textile processing, printing, dyeing and finishing. — ROYCE CHEMICAL COMPANY, Carlton Hill, N. J.

R-418 FUNDAMENTALS OF INDUSTRIAL WATER TREATMENT PROCESSES — 24 page booklet entitled "If You Use Water" discusses the fundamentals of the three major classifications of industrial water treatment based on ion exchange, softening, dealkalization, and deionization. — ROHM & HAAS COMPANY, RESINOUS PRODUCTS DIV., Washington Square, Philadelphia 5, Pa.

R-419 THEORETICAL AND APPLIED SILK SOAKING — Attractive twenty four page booklet outlining methods of silk soaking and telling of investigation on the soaking, back winding and degumming of silk. — HART PRODUCTS CORP., 1440 Broadway, New York 18, N. Y.

R-420 BRINE FOR TEXTILE INDUSTRY — 32 page booklet on the Lixate Process replaces former booklet on making brine that has been a standard reference for years. Contains much more technical information. — INTERNATIONAL SALT CO., INC., Scranton, Pa.

R-421 DEPUMA — An odorless, viscous, non-evaporating emulsion which is slightly efficient as an anti foam useful in all phases of dyeing and printing. Is described in a booklet available from — AMERICAN ANILINE PRODUCTS, INC., 50 Union Square, New York, N. Y.

R-422 CATALYST AC-6 — Booklet describes how Catalyst AC-6 steps up curing efficiency as much as 25%. Free eight-ounce bottle upon request. — MONSANTO CHEMICAL COMPANY, PLASTIC DIVISION, Dept. TI-3, Springfield 2, Mass.

R-423 NEW SODA ASH BULLETIN — 64 page edition contains both new material and revisions of previously used data covering the subject. — SOLVAY SALES DIV., ALLIED CHEMICAL & DYE CORP., 40 Rector St., New York 6, N. Y.

R-424 AQUAROL AND ARKANSAS PRODUCTS — Bulletin on Aquarol water repellent finish with method of preparing bath; also on other Arkansas products for cotton, wool, silk and yarn, hosiery processing. — ARKANSAS CO., INC., Newark, N. J.

R-425 WOOL OIL — Descriptive booklet on anti-static fiber lubricant, Twitchell 7421. Performance factors given particular emphasis are static control, scourability, lubricity and resistance to yellowing. — EMERY INDUSTRIES, INC., Dept. 5, Carew Tower, Cincinnati 2, Ohio.

R-426 INDUSTRIAL OIL — Bulletin catalogs all of Swift's Industrial Oil and Fatty Acid products. Included are detailed specifications, shipping information and suggested usage on products of animal, vegetable and marine sources. — SWIFT & COMPANY, INDUSTRIAL OIL DEPARTMENT, 1800 165th Street, Hammond, Indiana.

R-427 RESINS & LATICES — Booklet describes Chemigum latex, Pliolite latex, Plyola latex, Pliovic AO and their applications. Gives properties of Goodyear latices. — GOODYEAR CHEMICAL DIV., 1144 East Market St., Akron 16, Ohio.

R-428 CHEMICAL CATALOG — Features detergents, wetting agents, emulsifiers, brighteners, sequestrants, dyeing assistants, with chemical composition, properties and application. — ANTARA CHEMICALS DIV., GENERAL ANILINE & FILM CORP., 435 Hudson St., New York 14, N. Y.

R-429 WICA CHEMICAL BULLETINS — Bulletins describe in technical terms the various Wica Products for textiles. Issued each month for the benefit of industry, they are an excellent help in wet processing. To get on the mailing list write — WICA CHEMICALS, INC., P. O. Box 506, Charlotte, N. C.

R-430 HYDRAULIC POWER UNITS — Literature describing hydraulic unit, motor, pump reservoir, valving, a small compact unit for operating of hydraulic calenders, presses, hydraulic controls, etc. — B. F. PERKINS & SON, INC., Holyoke, Mass.

R-431 PROCTOR DRYING MACHINERY FOR THE TEXTILE INDUSTRY — Illustrated, descriptive catalog on all types of dryers for raw stock, warps, package dyed and skein dyed yarn. Also includes preloading and automatic loading machines for hosiery. — PROCTOR & SCHWARTZ, INC., 7th and Tabor Rd., Philadelphia, Pa.

R-432 AIR GUIDER — Booklet shows how Mechro Air Guider will simplify your guider problems, reduce maintenance cost, increase guiding efficiency. — THE GUIDER SPECIALTY CO., 425 West Rock Ave., New Haven 15, Conn.

R-433 SAFE HANDLING AND UNLOADING OF HYDROGEN PEROXIDE — A specially prepared hydrogen peroxide wall chart, that clearly and concisely outlines the safety rules to be followed in handling the product, is offered to users of hydrogen peroxide by the SOLVAY PROCESS DIVISION, ALLIED CHEMICAL & DYE CORP., 61 Broadway, New York 6, N. Y.

R-435 CUT WATER TREATMENT COSTS — Folder presents Oakite Airefiner No. 52, a mildly alkaline compound that is said to control scale, slime, algae and corrosion. — OAKITE PRODUCTS, INC., 126C Rector St., New York 6, N. Y.

R-436 RAPIDASE FOR DESIZING — Bulletin explaining in detail the properties and characteristics of Rapidase. — WALLERSTEIN CO., INC., 180 Madison Avenue, New York 16, N. Y.

R-438 SURFACE-ACTIVE AGENT — Bulletin gives characteristic properties, suggested applications, etc., of the Nonionic Actylphenoxyethanol Triton Surface-Active Agents. — ROHM & HAAS CO., Special Products Dept., Philadelphia 5, Pa.

R-439 CURING OVEN — Bulletin gives details of modern highly efficient, gas-fired curing oven for handling resin-treated fabrics. Shows outstanding features and enumerates advantages. — JAMES HUNTER MACHINE CO., North Adams, Mass.

R-440 GUIDERS AND TENSION DEVICES — Illustrated and described are the Mount Hope Precision Guiders and open width Tension Devices used for accurate, straight line guiding of open width goods. Bulletin 86-PG. — MOUNT HOPE MACHINERY CO., 15 Fifth St., Taunton, Mass.

R-441 PROCESSING ARNEL FABRICS AND BLENDS — Bulletin provides information on dyeing, printing, finishing and heat treating Arnel. Text, charts and diagrams included. Write for No. TD-15. CELANESE CORP. OF AMERICA, TEXTILE DIVISION, Marketing Dept., Charlotte, N. C.

R-442 HYCAR LATICES IN TEXTILES — New 16 page service bulletin features a chart showing the physical properties of the Hycar latices and typical fields of application for each. — ADVERTISING DEPARTMENT, B. F. GOODRICH CHEMICAL CO., 324 Rose Bldg., Cleveland 15, Ohio.

R-443 SODIUM HYDROSULFITE — Literature and test samples available on "T-C Hydro," a dry white, free-flowing, crystalline powder of concentrated sodium hydrosulfite. — TENNESSEE CORP., 617-629 Grant Bldg., Atlanta, Ga.

R-446 ETHANOLAMINES — Book describes monoethanolamine, diethanolamine, and triethanolamine, listing their applications, chemical and physical properties, physiological properties, etc. — NITROGEN DIVISION, ALLIED CHEMICAL AND DYE CORPORATION, 40 Rector St., New York 6, N. Y.

R-447 NAPPERS FOR TREATING ANY FABRICS — Bulletin gives complete details on the Muller Tri-Napping Machine with 24-30, or 36 rollers. Dimensions and weights included. — FRANZ MULLER, M. Gladbach, Germany.

R-448 BALL BEARING TURN TABLE — Leaflet describing this 48-inch diameter steel turn table for use in mills where the cloth is delivered in rope form in trucks and the trucks are placed in position ahead of a scutcher or cloth opening machine. Advantages discussed. — BIRCH BROTHERS, INC., 32 Kent St., Somerville, Mass.

R-449 ROTARY DYEING MACHINE — Booklet No. 425 illustrating the features of these stainless steel machines used for dyeing hosiery, hats, gloves, socks, etc. — SMITH, DRUM & CO., Allegheny Ave. at 5th St., Philadelphia 33, Pa.

R-450 HOW TO SELECT LIQUID METERS — Helpful free bulletin covers meters for brines, soap solutions, hot and cold water and other chemical solutions that can be handled by composition bronze meters. Write for bulletin 506UTI. NEPTUNE METER CO., 10 W. 50th St., New York 20, N. Y.

R-451 ROSS INDUSTRIAL DRYERS — Color bulletins describe Ross Dryers used in all industries for drying and curing. Gives complete story, including pictures, schematic drawings, etc. — J. O. ROSS ENGINEERING CORP., 444 Madison Avenue, New York 22, N. Y.

R-452 MICRO SWITCH BULLETINS — Complete selection of bulletins featuring Micro Switch products is now available. Includes prices, characteristics, applications, etc. — MICRO SWITCH DIV., MINNEAPOLIS-HONEYWELL REGULATOR CO., Freeport, Ill.

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R-456 DYEING AND FINISHING MACHINERY — Complete line of Birch Brothers' machinery for dyeing and finishing is presented in series of catalogs. — BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass.

R-457 DYEING, BLEACHING AND DRYING EQUIPMENT — Excellent color brochure in Morton describes their complete line of dyeing, bleaching and drying equipment for cotton, wool and synthetics. — MORTON MACHINE WORKS, 1718 3rd Ave., Columbus, Ga.

R-458 NAPHTHOL RATIOS SLIDE CHART — Slide guide now available quickly and accurately enables dyer or printer to determine Naphthol Ratios. Free to persons writing on company letterhead. — ALLIANCE COLOR AND CHEMICAL CO., 33 Avenue P, Newark 5, N. J.

R-459 MORTON "PCB" ROCK SALT — Free booklet tells how "PCB" Rock Salt saves money on sequestering agent, eliminates streaks and offshading, and increases color intensity. — MORTON SALT CO., INDUSTRIAL DIVISION, Dept. T I.-3, 120 So. LaSalle St., Chicago 3, Ill.

R-460 COLOR PRINCIPLES — Booklet available from Sandoz Chemical describes the fundamental principles of color and its measurement. Booklet has been adopted by several of the leading textile schools. — SANDOZ CHEMICAL WORKS, INC., 61 Van Dam Street, New York 13, N. Y.

R-461 WOOL OILS — Twin booklets by Procter and Gamble tell of the influence of wool oils in producing quality yarns and fabrics, and of Procter and Gamble's Proxol T, an outstanding wool oil. — PROCTER & GAMBLE DIST. CO., Cincinnati, Ohio.

R-462 BLEACHING WITH PER-OXYGEN CHEMICALS — Bleaching methods for cotton, rayon, nylon and animal fibers are comprehensively treated in Becco Research and Development Dept. Bulletin No. 52, now available. — BUFFALO ELECTRO-CHEMICAL CO., INC., Station B, Buffalo 7, New York.

R-463 HERMAS TEXTILE MACHINES — Selection includes brochures on Unwind Stand, Automatic Guiding Unit, Jet Mixer, Selvage Trimming, Clothroom Machinery. — HERMAS MACHINE CO., Hawthorne, N. J.

R-464 AUTOMATIC CONTROL SYSTEM FOR CONTINUOUS BLEACHING — Illustrated folder describes the new method of controlling the temperature, pressure, and liquid level in the continuous bleach operation. — TAYLOR INSTRUMENT COMPANIES, Rochester 1, N. Y.

R-465 WET PROCESS CHEMICALS — Catalog with product information on scouring agents, wetting agents, water repellents. — DYES & CHEMICALS DIV., E. I. DU PONT DE NEMOURS & CO., INC., Wilmington, Del.

R-466 PENFORD FINISHING GUMS — Booklet by Penick & Ford gives complete data, including physical properties and results which may be expected on Penford gums. — PENICK & FORD, LTD., 420 Lexington Ave., New York 17, N. Y.

R-467 REGENERATION OF ZEOLITE WATER SOFTENERS — Booklet explains advantages of International's Lixate Process in regeneration of zeolite water softeners. Shows how it cuts costs and does a better job. — INTERNATIONAL SALT COMPANY, INC., Scranton, Pennsylvania.

R-468 DYEING SYNTHETIC FIBERS — Brochure giving a comprehensive, detailed analysis of the methods and materials available for dyeing synthetic fibers. — GENERAL DYESTUFF CO., 435 Hudson St., New York 14, N. Y.

R-469 SINGLE APRON STOCK DRYERS — Folder presenting the latest idea in automatic drying which every mill having drying problems can profitably use to meet modern manufacturing conditions. — C. G. SARGENT'S SONS CORP., Graniteville, Mass.

R-470 ELIMINATE DYE-BATH SHOCK — Data sheet by Foxboro shows how woven fabrics and hosiery may be protected from crow's-feet, uneven shade, creasing caused by too rapid cooling of goods. — FOXBORO COMPANY, 487 Neponset Ave., Foxboro, Mass.

R-471 CONTINUOUS PEROXIDE BLEACHING RNAGES — Booklet gives illustrations and describes uses and gives specification of ranges. — RODNEY HUNT MACHINE CO., 49 Mill St., Orange, Mass.

R-472 HIGH PRODUCTION EXTRACTOR FOR RAW STOCK—YARN—HOSIERY — Descriptive bulletin and full information on automatic Twinframer Extractor with bottom-unloading removable baskets. Machine replaces three conventional extractors, lowers labor costs. — FLETCHER WORKS, INC., Philadelphia, Pa.

R-473 RUBBER COVERED ROLLS — Catalog covering the various types of rubber rolls made of natural rubber, Buna S, neoprene, Buna-N (Hycar) or Compar. — DEPT. TI, TYER RUBBER COMPANY, Andover, Mass.

R-474 INDUSTRIAL BRUSHES — Illustrated booklet of industrial brushes featuring textile usage on shears, printing machines, also flock, raising and grinder brushes. — M. W. JENKINS' SONS, INC., 444 Pompton Ave., Cedar Grove, N. J.

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R-478 WOOL CLEANING UNIT — Pamphlet describes Proctor & Schwartz's unit for cleaning carpet wools mechanically before scouring. Includes diagram, list of components, and advantages. — PROCTOR & SCHWARTZ, INC., 7th St. & Tabor Rd., Philadelphia 20, Pa.

FIBERS AND YARNS

R-501 TEXTILE RESEARCH AT AMERICAN VISCOSE — Color booklet tells the story of the Textile Research Department which is, in effect, a many-sided textile mill. — AMERICAN VISCOSE CORP., 350 Fifth Avenue, New York 1, N. Y.

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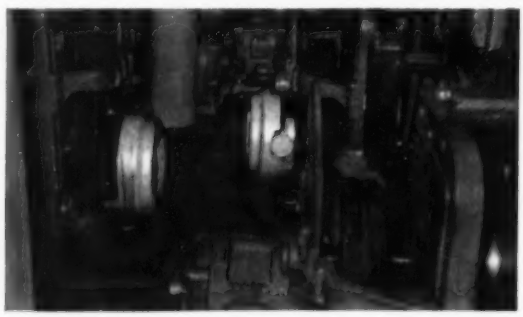

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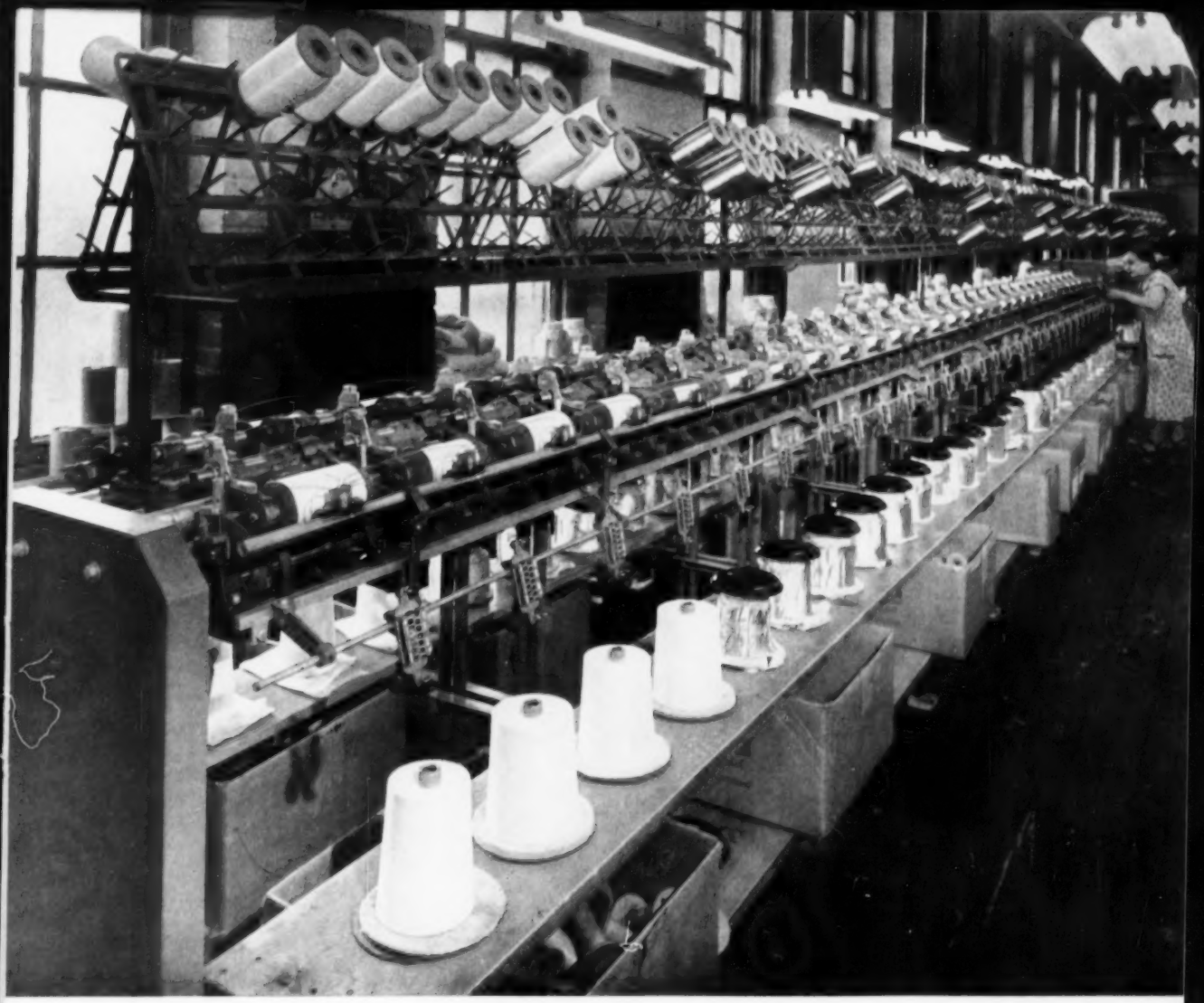
R-915 SCIENTIFIC MATERIALS HANDLING — Brochure by Bennett Rose describes various materials handling devices offered textile industry, including pictures of each. — BENNETT ROSE CO., Box 8, Roebuck, S. C.

R-916 OVERHEAD MATERIALS HANDLING — Three booklets available from Louden Machinery Co. treat economical material handling, twin fan ceiling cleaners, and shock proof electrification. — LOUDEN MACHINERY CO., Fairfield, Iowa.

R-917 LITTLE PACKAGING LIBRARY — Series of booklets by Hinde & Dauch provides complete information of shipping in corrugated boxes. A must in every shipping department. — HINDE & DAUCH, Sandusky, Ohio.

R-918 INDUSTRIAL TRACK EQUIPMENT — Color booklet describes "Safe Rail" track developed as a supplement to the "Zig-Zag" Power conveyor. Complete engineering data included. — RICHARDS WILCOX MFG. CO., Aurora, Ill.

R-919 IMPROVED MATERIALS HANDLING — Booklet entitled "Materials In Motion — by National," describes the use of lightweight vulcanized fibre containers to increase efficiency, reduce costs and simplify methods of materials handling. — NATIONAL VULCANIZED FIBRE CO., 1056 Beech Street, Wilmington 99, Del.



On this Kidde-Sipp Winder-Redraw

SPOOLS NEVER OVERRUN

You get nothing but uniformly full spools — no overruns and no partially filled spools — with the Kidde-Sipp Winder because the instant a spool is full, it's stopped — automatically. And with one hand your operator can doff it and load again in seconds. These advantages combined with self-threading guides and high running speed mean this: one operator can tend more spindles and turn out more poundage on the Kidde-Sipp Winder than on any other machine. For complete information, write us today.

ONE HAND does it, without touching the yarn . . . operator can doff a full spool in a split second, with a flip of the hand . . . and her fingers never even touch the yarn.

TRICOT AND RASCHEL MACHINES • TRICOT WARPERS • HORIZONTAL WARPERS
BEAMERS • CREELS • SLASHERS • WINDER-REDRAWS • TENSOMETERS

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MANUFACTURING CO., INC. — 42 FARRAND STREET — BLOOMFIELD, NEW JERSEY

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EQUIPMENT
MATERIALS

CAN MEAN A HEALTHIER
PROFIT PICTURE FOR YOUR MILL

Our list of clients reads like the Blue Book of American Manufacture, and in our files are many expressions as to our service and results accomplished, like the following:

"We have found them to be a very high type concern and are glad to recommend them to anyone interested in the type of work they sell."

*A SMALL SOUTHERN HOSIERY MILL**

*Name on request

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★ A FAIR DAYS PAY AND IN RETURN, A FAIR DAYS WORK.

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Personal NOTES ABOUT MEN YOU KNOW

(Continued from page 58)

ing **T. J. Kennedy,** who retired. **George W. Aufderheide** has joined the selling organization as director of finished goods sales. **Harold C. Kelley** is now general superintendent in charge of all manufacturing, replacing **Manlio Frova,** retired. **Avery K. White** has retired as vice-president; also **Edward H. Arnold,** assistant treasurer, after many years of service in the Adams area.

George O. Linberg, vice-president and New England sales manager of Synthron, Inc., Ashton, R. I., has been elected the 14th president of the American Association of Textile Chemists and Colorists. Four regional vice-presidents elected are: **Weldon G. Helmus,** vice-president and general manager of Fair Lawn (N. J.) Finishing Co., Middle Atlantic region; **Ernest R. Kaswell,** president

Mr. Linberg

and associate director of Fabric Research Laboratories, Dedham, Mass., New England region; **H. Gillespie Smith,** Southeastern manager, dyestuffs department, American Cyanamid Co., Southern region; and **Elliott Morrill,** plant manager and technical director, Indianapolis plant and Rit products division, Best Foods, Inc., Indianapolis, Ind., Western region.

A. J. Day, formerly overseer of carding and picking at L. B. Lockwood Co., Cleveland, Ohio, succeeds G. H. Wiley as superintendent.

At Cone Mills Corp., Greensboro, N. C., two long-time associates retired on December 31. They were **Saul F. Dribben,** a director of the corporation and chairman of the board, who had been with the firm for 62 years, begining his career there when he was 14 years old, and **Sydney Bluhm,** head of the cotton department and assistant treasurer, who had seen 49 years of service with Cone Mills Corp. He had also been in the cotton business since the age of 16.

E. J. Wentz, for many years associated with Dan River Mills, Inc., Danville, Va., as a production and technical superintendent, has retired. He plans to offer his service in a consulting capacity to other textile manufacturers.

Filling a newly established position at Palmetto Worsted Mills, Laurens, S. C., **Jerome Wylie** is in charge of time and motion study, production planning, and specialty developments in new yarns.

Retiring at the close of 1956 was **Herbert A. Burow,** for 21 years manager of Bonham (Tex.) Cotton Mills and a member of the executive committee of Brenham (Tex.) Cotton Mills.

At U. S. Rubber Co., Hogansville, Ga., **Houston Thomas** has been promoted from loom fixer to shift supervisor.

OBITUARIES

William E. Acton, 61, head cotton buyer and classer of Pepperell Manufacturing Co., Biddeford, Maine.

W. M. Allison, 41, superintendent of Spartan Mills, Startex, S. C., plant.

S. F. Bryan, treasurer of The Jefferson (Ga.) Mills, Inc.

Everett W. Clarke, treasurer of Howard-Arthur Manufacturing Co., Fall River, Mass.

Frederick W. Gatenby, 50, general manager of Forge Mills, Inc., Forge Village, Mass.

David Wills Hunter, retired chairman, president, and treasurer of the former Arcade Cotton Mills, Rock Hill, S. C., now Arcade Mills of Mt. Vernon Mills, Inc.

S. W. Quisenberry, finishes division, E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.

William C. Ross, president of the former Knoxville (Tenn.) Knitting Mills Co., and vice-president of the former Knoxville Woolen Mills.

Pomp Shaefer, 63, vice-president of Lawler Hosiery Mill and manager of Carroll Mills, Carrollton, Ga.

John F. Shea, 51, vice-president in charge of sales for the Becco Chemical division of Food Machinery and Chemical Corp., Buffalo, N. Y.

Cyril Smith, 60, superintendent of the dyeing plant of Mercer Yarn Co., Philadelphia, Pa.

Charles Weber, 67, treasurer and secretary of Fair Lawn (N. J.) Finishing Co., and Richmond (Va.) Piece Dye Works.

Here's why MODERN BLENDS call for MODERN **AVISCO** RAYON with MODERN FINISHING

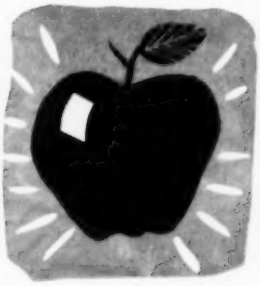
luxurious hand

improved drape

affinity for color

absorbency

comfort



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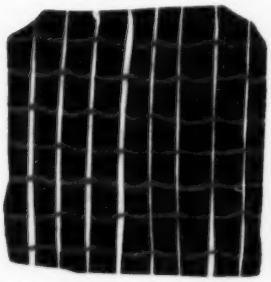


cross-dyeing style potential

less need for glazing

moth resistance

static resistance

superb tailorability

price stability

Great new things have been happening to the oldest man-made fiber. In American Viscose rayon research labs—the world's largest—the rayon fiber has been made stronger and more versatile.

Thus it is more useful to you and more desirable to the consumer.

The versatility of this modern Avisco rayon fiber has been further enhanced by modern finishing. In blends with other man-made or natural fibers, it brings all the above fine qualities and many more.

Add the Avisco Integrity Tag to apparel at point of sale and the public knows that quality and performance are assured. For more details, call or write American Viscose Corp., 350 Fifth Ave., New York 1, N. Y.

What the TEXTILE MILLS are doing

Brookford (N. C.) Mills, a unit of United Merchants and Manufacturers, has ceased operations for an indefinite period. An announcement made to the employees at the plant read in part: "We have reached this conclusion only after a long and careful study of our operations at Brookford Mills which has led us to the inescapable conclusion that we will be unable to continue manufacturing our products at this plant in an economical, efficient, and competitive manner."

A new member company of Burlington Industries, Inc., has been formed under the name of **Burlington Finishing Corp.** The company will engage in commission finishing and dyeing operations with plants in Dublin and Altavista, Va., and Greensboro, N. C. The plants are equipped to handle the dyeing and finishing of dress goods, lingerie, men's wear, automotive, and other types of woven goods. * * * The name of the Flint #1 plant in Gastonia, N. C., has been changed to **R.C.G. Love Mill** in honor of the man who built the first cotton mill in Gastonia. * * * The Marion, Va., hosiery plant is now called the **Grover Furr Hosiery Co.** in honor of the vice-president of Burlington Hosiery Co.

After being closed for several weeks, **Colonial Woolen Mills Co.,** Cleveland, Ohio, has reopened under the management of N. S. Glauber, president; George J. Hahn, secretary-treasurer; and James Borgia, superintendent.

Twenty-two men are enrolled in the loom fixer courses at the Fieldale, Va., towel mill of **Fieldcrest Mills, Inc.** The courses, on Jacquard and terry looms, are attended by eleven men each, and are designed as refresher courses for men with fixer experience, and for beginners.

According to a recent announcement, the name of Consolidated Textile Co., Inc., has been changed to **Windsor Industries, Inc.,** and management of the firm is seeking a new "profitable business" acquisition. Anticipating abandoning the textile manufacturing field because "the textile industry is doomed unless we can compete with Japan," the firm plans to retain its large investment in Bates Mfg. Co.

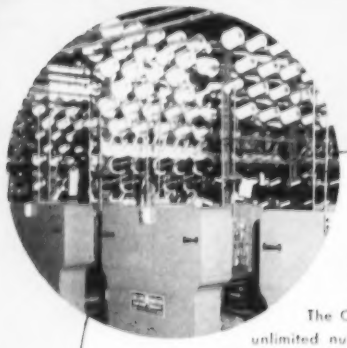
To meet increasing production demands, **Hightstown (N. J.) Rug Co.** has broken ground for a plant addition to be completed around June, 1957. The addition, located on a 45-acre plot about a mile from the present plant, will be used at first for warehousing and shipping.

The Johnston, S. C., division of **Riegel Textile Corp.** is a new 160,000 sq ft plant devoted to the manufacture of diapers, crib sheets, infant's knitwear, pillow cases, etc., and is a windowless, air conditioned, one-story structure.

Courtesy Lockwood Greene Engineers, Inc.

An organization, **National Cashmere Association,** has been formed by import brokers, de-hairers, and spinners and manufacturers of knitted and woven products, to take the necessary steps to protect the consumer against misrepresentations, to improve the marketing of cashmere and other specialty fibers, to establish quality standards, to protect the prestige value of luxury fibers, and to maintain sales. Association members have approved plans "to take steps to change labeling laws to give retailers and consumers factual labelling, to eliminate misrepresentation, and to make it easier for store buyers and consumers to distinguish value."

A new company for the production of full-fashioned ladies' sweaters of fur blends, Orlon, Ban-Lon, and cashmere, has been formed in Puerto Rico under the name of **Marita Mills.** Officers of the new company include: Arthur Reinthal, pres-



The COLLINS C/B
Single or Dual-Drive
Novelty Twister
is the Most Flexible Twister for NOVELTY Yarns

The Collins Novelty Twister will produce an unlimited number of novelty yarn constructions — from all types of yarns — from the finest to the coarsest counts. This twister has long been the undisputed leader in the novelty field, and such improvements as the exclusive 7-speed Ultrahead with reversing attachment, and the Dual-Drive which allows each side of the frame to be run independently of the other in regard to speed, twist direction, and yarn construction, make this Collins Novelty Twister the ideal for novelty yarn mills.
There is a Collins Twister for Every Ply Yarn Construction . . . Novelty, Ply, Big Ring, Beam, Cabling, Wet, Trap, Rayon, Paper, Glass, Single or Dual-Drive, and Special Twisters. Write for full information.

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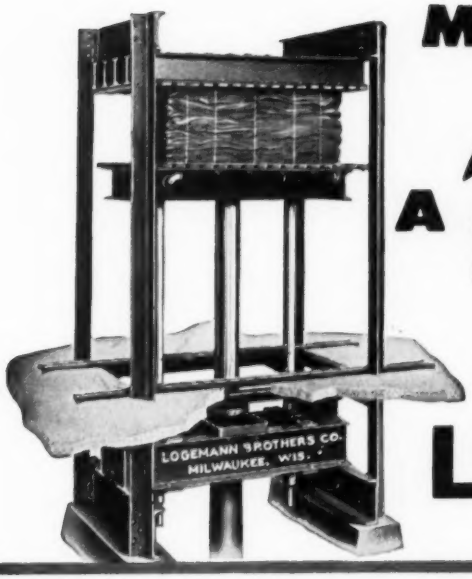
There is a Collins Twister for Every Ply Yarn Construction

MAKE YOUR BALING A *Profitable* OPERATION

with dependable

LOGEMANN BALING PRESSES

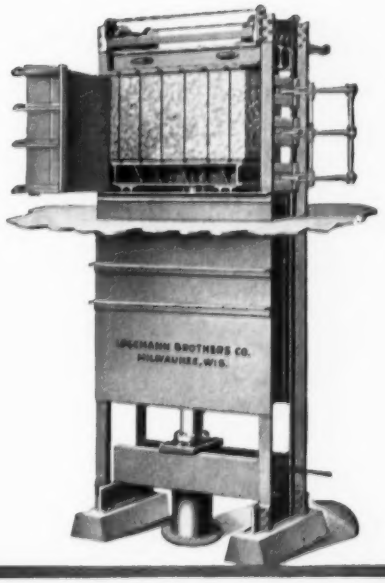


Open balers for finished goods may be hydraulic or power-driven. Give platen dimensions required, maximum height of pile to be compressed, number of bales per hour, when requesting information on open balers.

Tell Us Your Baling Problems

That's the best way to get the right answers to low-cost time-saving baling. During our sixty years of building balers for the textile industry we've solved many a baling problem for mill owners. Our engineers know how to make baling operations pay their own way in time and labor-savings, in speedier, more reliable handling of bales, in lower maintenance cost. Many Logemann balers have been in profitable operation since the turn of the century—evidence of the ruggedness, durability, and long service life of Logemann baling presses.

In the interests of better baling operations in your plant, find out what Logemann balers can do for you. Tell us what your specific problem is. We'll gladly show you how it can be answered in terms of better bales at lower costs and make a specific recommendation based on your requirements. Write for information today.



Box balers for waste may be obtained in either the hydraulic or power driven type. Mention the kind of waste to be baled, how much in how many hours, the preferred size or weight of bale when inquiring about box balers.

LOGEMANN BROTHERS CO.

3102 West Burleigh Street • • • Milwaukee 10, Wisconsin

What the TEXTILE MILLS are doing

ident; David Reinthal, vice-president; and Edwin Bamberger, secretary-treasurer. All are from Cleveland, Ohio. Carl Newald, also from Cleveland, is managing director of the plant.

Mayfair Chenilles, Inc., a division of Collins & Aikman, has constructed a plant in Dalton, Ga., to house the general offices, the style and research center, and finishing and shipping facilities of that company.

A line of short hosiery being produced by **Coopers, Inc.,** Kenosha, Wis., features rubberless tops separately of nylon and cotton, and attached by an undisclosed method to the nylon-reinforced cotton bodies.

The local economic and social contributions made by the **Tifton (Ga.) Cotton Mills** during the past 55 years have been recognized by the citizenry in a recent series of ceremonies sponsored by the local Chamber of Commerce.

At the annual banquet held this year on November 10, 28 new members were welcomed into the 25-Year Club of **Erwin Mills.** Four employees received gold watches commemorating the completion of 50 years employment with that firm.

The merger of Paul Whitin spinning Co., into **Franklin Research Corp.,** Boston, Mass., has been announced. The 100-year-old Whitin Co. will continue to spin synthetic yarns. Included in the merger is Frank Industries, Worcester, Mass., purchased by Whitin about a year ago.

The Overbrook Hosiery Co., Maiden, N. C., has been purchased by **Chester H. Roth Co., Inc.** The plant produces men's hosiery.

Appropriation of funds for five new grants has raised **Albany (N. Y.) Felt Company's** scholarship program to a total of 13 annual grants to qualified high school graduates and college students. The new grants, to be awarded this spring, are four-year ones. Scholarships have an annual value of $500 to $600 and include an opportunity for summer employment at Albany Felt. The purpose of the program is to encourage young men to major in textile manufacturing, engineering, chemistry, and physics in order to help meet the nation's demand for professionally-trained men.

Help your
HEART FUND
Help your
HEART

Sternwild Knitting Mills, Inc., has moved its plant from Yonkers to Ballston Spa, N. Y. The new location provides the firm with an additional 20,000 sq ft of floor space to be used in the production of men's, ladies' and children's knitted gloves, mittens, and leather-soled slipper socks.

The Stonewall (Miss.) division of **Erwin Mills, Inc.,** recently was host to 47 members of the 25-year club at a banquet presided over by C. O. Walker, resident manager. Among the club members honored were five people who have 44 years or more of uninterrupted service with the company. The plant at Stonewall, the only one of the Erwin plants not located in North Carolina, makes indigo denims.

Knitting operations at the **Cashmere Corporation of America,** Cleveland, Ohio, have been discontinued. The carding and spinning of cashmere yarns will continue.

The building of the former Ella Mills, Shelby, N. C., will be utilized by **Sackville Mills Co.,** Wallingford, Pa., for the manufacture of interlinings for men's and women's clothing. A renovation program is underway to prepare the plant for production, which at capacity is expected to employ from 250 to 300 people.

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CORPORATION
1 TO
600 H.P.
A.C.
SINCE 1904

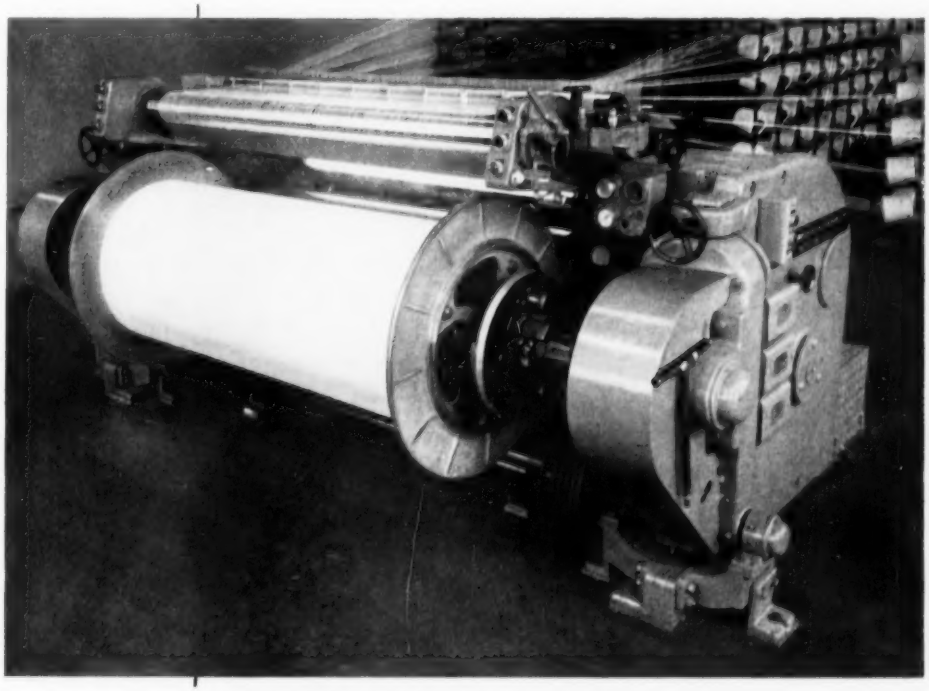
3553 W. PETERSON AVE.
CHICAGO 45, ILL.

"Not one 'Blown' Dye Beam in 1,000"

This warper has proven of exceptional value in producing dye beams of soft, even density throughout. It permits lower and even-er pressure in dyeing . . . quick and even dye penetration . . . increased speeds by 60% . . . and minimizes danger of blowing. "Not one blown dye beam in a thousand" is the report from one mill.

The air-controlled presser roll on the Model SD-54 can be set to any desired density — hard or soft — and accurately maintains that pressure from beginning to end. Horizontal traverse on comb and roll prevents channeling. Driving and braking beam from both ends eliminates backlash in starting or stopping. Patented differential yarn speed control, extra heavy duty bearings, electrically controlled doffing, and other valuable features make this the most serviceable warper for any yarn or purpose. Operates at speeds of 550 yds. per min. on dye beams and over 700 yds. on general warp beams.

Cocker No. SD-54 Warper



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Write for full information today.

THE LEADER AROUND THE WORLD

COCKER Machine and Foundry Co., Gastonia, N. C.

WORLD'S LARGEST DESIGNERS AND BUILDERS OF COMPLETE WARP PREPARATORY EQUIPMENT

SUPPLIERS News

WHAT THEY ARE DOING

The American Blower Co. in 1956 celebrated its 75th anniversary. The Oct. 4, 1956, issue of "The Dearborn (Mich.) Press" was designated the firm's diamond jubilee edition.

Atlantic Steel Co. has named as its chairman and chief executive officer, Robert S. Lynch, who is succeeded as president by Howard B. Johnson. Charles F. Stone has been elevated from board chairman to chairman of the executive committee.

George D. Williams has been appointed manager of the Boston district office of **Bailey Meter Co.,** succeeding the late P. T. Reuter.

Four technical representatives, after completing training in the general sales office in New York, have been assigned to district offices of **Carbide and Carbon Chemicals Co.,** a division of Union Carbide and Carbon Corp. The assignments are: J. A. Buser to N. Y.; A. A. Jackson to Atlanta; R. C. McQueen to Kansas City; and C. D. Schmidt to the Chicago district. Two reassignments of technical representatives have been made in the sales department as follows: W. P. Emerson from office to field sales in the Atlanta district; and M. H. Mackay from the Chicago district to the Newark district.

Kenneth C. Loughlin has been elected executive vice-president of **Celanese Corporation of America,** filling a newly-created position. Appointments of three new company vice-presidents have been announced as follows: Ronald O. Gilbert, who also will continue to serve as secretary of the corporation; John W. Brooks, who succeeds Mr. Loughlin as general manager of the textile division; and Alexander R. Cochran, former manager of plant operations for the chemical division, who will coordinate planning for the corporation's manufacturing facilities and engineering policies. Peter H. Conze succeeds Mr. Brooks as director of textile marketing.

Thomas F. Parks has been appointed to the newly created position of assistant to the vice-president and general sales manager of **The Chemstrand Corp.,** with offices at the firm's New York headquarters.

At **Continental Gin Co.** Nelson J. Kemp has been named vice-president in charge of finance, in addition to his duties as treasurer. George C. Morgan is new vice-president in charge of the industrial division.

Cook . P & N Machine Co., Inc., has moved from Boston, Mass., to a new plant located on Jackson Street in Nashua, N. H., where the firm will continue to produce its line of equipment for the bleaching, dyeing, and finishing of textiles. The company name has been changed to Cook Machine Co., Inc.

Dayton Rubber Co. has appointed as director of public relations, Bernie F. Thomas who was formerly associated with Studebaker-Packard Corp. in a similar capacity. He succeeds Ray Wetzel who has been advanced to act as consultant on all public relations activities for the company's six plants throughout the U. S.

New sales manager of the recently formed textile fibers department of **The Dow Chemical Co.** is Amos L. Ruddock who will supervise sales, market research, distribution, customer service, and merchandising in connection with the company's new textile fiber, Zefran. Mr. Ruddock succeeds G. J. Williams, named to the new position of assistant to the sales manager of the plastics department. Now in charge of plans for a fiber research, manufacturing, and marketing center near Lee Hall, Va., is Arthur E. Young.

Lee O. Witzenburg, formerly general sales manager of **The Cleveland Worm & Gear Co.** and its affiliate, the Farval Corp., has been appointed vice-president in charge of sales for both firms.

Alfred B. Layton, formerly vice-president for administration and finance at the **Crown-Zellerbach Corp.,** has been elected president of the firm. Reed O. Hunt steps up from

Small Size—

Big Capacity

Universal Steam Trap

Exceptional Capacity

This small, light-weight, inexpensive bucket type Unitrap* has a discharge capacity of 1000 lbs. per hour at 125 lbs. pressure. This is more than adequate for most textile mill applications, such as slashers, dry cans, calenders, printing and coating machines. It assures fast warm up.

Completely Universal

Like larger Unitrap Models the ½" size Model 70T, shown here, operates on a balanced pressure principle through the unique function of its new and exclusive Dual-Valve, which automatically compensates for differential pressures through a range of 0 to 125 lbs. PSI. It adjusts to changes in steam pressures and condensate rates without requiring changes or adjustments of orifice or valve.

Reduced Maintenance and Wear

In-line maintenance, stainless steel working parts, and automatic universal pressure range eliminate most of the usual maintenance and replacement costs. Large orifices and positive sealing of the valve reduce wear and wire drawing to a new low.

Eliminates "Guess Work"

The universal range of the Unitrap line takes the "guess work" and engineering out of ordering steam traps; as well as adjusting to pressure application for peak machine efficiency.

for full information

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Perfecting Service Co.

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Baltimore • Camden, N. J. • Chicago
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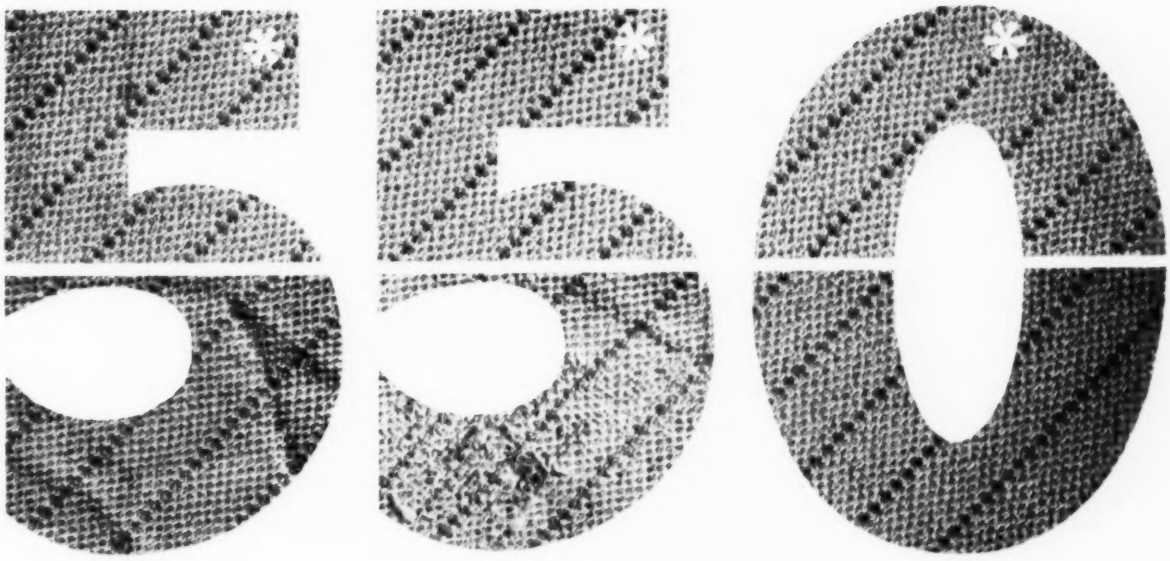


THE WICA REACTANT RESIN!

FIVE

Hangs-out five times better than untreated fabric . . . all for less than a fifth of the cost of lost buyers when the market demands full blown-up feel of reactant resin results.

FIVE

"Formidable" resistance is offered to surface abrasion . . . tensile strength, resiliency and hand is substantially increased . . . vitality of fabric is dramatically improved . . . each fibre is reinforced with penetration of WICA reactant resin 550 throughout.

ZERO

Dyed shades are effected negligibly . . . nothing impedes fabric's breathing with WICA resin 550 . . . voided orders are unheard of with alive, easy handling fabric treated with WICA reactant resin 550.

Wica

WICA CHEMICALS, INCORPORATED

OLD CONCORD ROAD • CHARLOTTE, NORTH CAROLINA

synthetic organic chemicals • textile specialties

latices • adhesives

SPECTRUM ACCURACY

We will treat a sample of your fabrics on request.

SUPPLIERS News
WHAT THEY ARE DOING

vice-president for operations to executive vice-president. The two men replace J. D. and Harold L. Zellerbach who are retiring from active management.

Frederick W. Baldt, president and a director of the **L. H. Shingle Co.**, has been elected a director of the **Graton and Knight Co.** Conversely, Walter W. Weismann, president of the Graton and Knight Co., has been elected a director of the L. H. Shingle Co. The election of directors to each others competitive companies was explained as a move to improve operations through and by the exchange of information and knowledge of each others operations, with the hope of benefiting the entire industry.

Geigy Chemical Corp. has completed the move of all its divisions to its new offices and laboratories on Saw Mill River Road, Ardsley, New York. The corporation, a wholly owned subsidiary of J. R. Geigy S. A. Basle, Switzerland, will celebrate its 200th anniversary next year.

Johnson Service Co. has established new branch offices at Fort Worth, Texas, and Savannah, Georgia. James R. Gaylor, formerly of the Atlanta branch, is in charge of the Savannah office; and R. C. Spangenberger, formerly with the Dallas office, is in charge of the Fort Worth branch.

District managers for **Link-Belt Company** have recently been relocated as follows: George A. Most, Jr., Boston, Mass.; J. Charles Bullock, Moline, Ill.; Gene A. Zwerner, Albany, N. Y.; C. C. Wiley, Washington, D. C.; and Paul Waldorf, Baltimore, Md.

Appointment of Coy F. Stroud as manager of the southern sales division for **The Goodyear Tire & Rubber Co.**, with headquarters in Atlanta, has been announced. Mr. Stroud succeeds the late L. H. Shepherd.

The textile leather division of **The National Industrial Leather Association** elected as chairman for 1957 Paul Frey, L. H. Shingle Co.; and as vice-chairman Julius A. Schachner, Jr., Schachner Leather & Belting Co. New president of the association is Wm. H. Chestnut, Mechanical Leathers, Inc.; vice-president, John R. Lovett, Cleveland Oak Belting Co.; and treasurer, A. B. Laurence, Laurence Belting Co.

Edward J. Baxter has joined **Dexter Chemical Corp.**, as technical sales representative for textile chemicals in Virginia and North Carolina. He was formerly associated with E. F. Drew & Co.

Robert M. Tobin has been appointed sales manager of the "Powrworker" section, industrial truck division, **Clark Equipment Co.**

Robert C. Swan has been added to the New York staff of **Standard-Coosa-Thatcher Co.** as thread and yarn salesman. Mr. Swan was previously cotton yarn salesman for John F. Street & Co. * * * Richard C. Thatcher, Jr., has been elected vice-president in charge of thread sales of the Chattanooga company. He was formerly assistant vice-president.

More than a thousand textile industry executives attended the official opening of the "retail-type" showroom of the centrifugal division of **The Fletcher Works** in Philadelphia on November 15. Edward T. Taws, president, headed the engineering and executive sales staff which was host for the occasion.

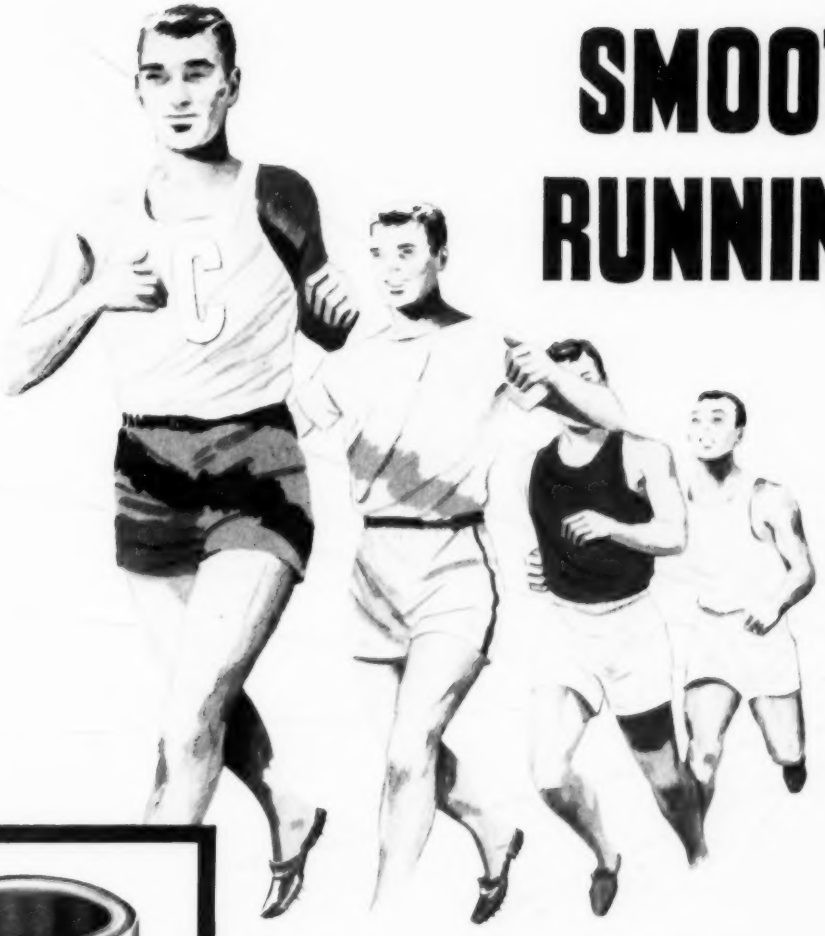
The opening of an instrument service shop at 3232 Roswell Road in Atlanta for the convenience of industrial instrument users in the Southeast has been announced by **The Foxboro Co.** Maynard S. Batchelder has been appointed shop manager.

The Gulf Oil Corp. has purchased options on more than 3,000 acres of land at Charleston, S. C., as the possible future site of an oil refinery. The proposed location is near Bushy Park, the gigantic industrial water project which will produce a potential 10 billion gallons of fresh water daily, a vital requirement for the successful operation of an oil refinery.

The Sheffield Corp. has announced a merger of its interests with those of the Bendix Aviation Corp., under which the business of the former will be continued as a wholly-owned subsidiary of the latter. Management of the Sheffield firm will continue as in the past—no change in contracts, orders or related procedures is anticipated. The move

STOP
lumps in your opening line
It costs nothing to find out if your present equipment is handling your fibers efficiently—and it may prevent poor work, insufficient cleaning, waste, and lost production.
Surveys made by Dodenhoff engineers show that the aprons on over 30% of today's opening equipment are out of date. In many cases, only simple changes of pin sizes or slat respacing were necessary. Call on Dodenhoff for a free check-up on your equipment. And for opening equipment and aprons of unmatched efficiency, always call on Dodenhoff first.
New and reworked Textile Aprons
Beater Slats
Waste Machine Cylinders
Kirschner Beaters
W. D. DODENHOFF CO.
INCORPORATED
GREENVILLE, SOUTH CAROLINA

SMOOTH RUNNING!



CARTER TRAVELERS

are the smoothest ever known!

When you specify CARTER TRAVELERS, you insure smooth running work —finer, stronger yarns—simply because there is no substitute for QUALITY. Manufactured under the rigid, scientific control of a modern metallurgical laboratory, the quality of materials and workmanship in CARTER TRAVELERS is consistently—and dependably—the best.

Carter TRAVELER COMPANY

Division of A. B. CARTER, INC., GASTONIA, N. C. *Manufacturers of The Boyce Weavers Knotter*

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D. E. Phillips, 2702 Garden Lakes Blvd., Rome, Georgia • P. L. Piercy, 128 Hudson St., Spartanburg, S. C.
J. R. Richie, 1307 Crabapple Lane, Raleigh, N. C. • J. K. Davis, P. O. Box No. 129, Auburn, Ala.
C. E. Herrick, 139 Main St., E., Greenwich, R. I. • Oscar S. Lapham, 139 Main St., E., Greenwich, R. I.
Hugh Williams & Co., 27 Wellington St., E., Toronto, Ontario, Canada

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Phone: PRospect 6-3512

Southern Representative:
John C. Cosby, P. O. Box 212
Greenville, S. C.

BIRCH TREE

HAROLD W. BIRCH CLIFFORD W. BIRCH, JR.

SUPPLIERS News
WHAT THEY ARE DOING

was aimed at improved and expanded engineering and manufacturing resources.

Lee F. Samler, vice-president of **The Saran Yarns Co.**, has been appointed to the position of vice-president and general manager. He will retain his position as technical director of the National Plastics Products Co.

At Elizabeth, N. J., the **Reliance Electric and Engineering Co.** has opened its East Coast distribution center. The plant will devote most of its 15,600 sq ft of floor space to the assembling and warehousing of Reliance motors, gear motors, V-S drives, Reeves drives and their components. Kenneth R. Wright has been named supervisor of the new center.

J. O. Ross Engineering Corp. has acquired the business of Andrews & Goodrich, Inc., designers and manufacturers of ventilating equipment and dryers for textile materials and products. Andrews & Goodrich will continue to operate as a division of the J. O. Ross firm, with sales, engineering, and manufacturing to continue at the A. & G. offices and plant in Dorchester, Mass.

Henry A. Weil has joined the firm of **Sandoz Chemical Works, Inc.**, as associate director of the New York application research laboratories. In his new position, Mr. Weil will supervise the subdivision of the laboratory which works on application of Sandoz dyes to new fibers, mill processes, and development of desirable dyeing methods and procedures. He was formerly with the Chemstrand Corp.

Durene Association of America has named president Donald R. Jonas, vice-president of Spinners Processing Co., Rutherfordton, N. C., division of Johnston Mills Co. Elected vice-president was R. D. Hall, Jr., general manager of the yarn division of The American Thread Co.

A complete application engineering service aimed at reducing materials handling costs is now being offered by **Lewis-Shepard Products, Inc.** The plan is said to be especially adaptable to companies seeking a precise, impartial analysis of their present materials handling methods.

Mr. Holmes
Progressive

Mr. Houth
Metro-Atlantic

W. W. Holmes has been appointed general sales manager of **Progressive Engineering, Inc.**

George N. Houth has joined **Metro-Atlantic, Inc.**, as a sales representative for the firm's chemicals and dyestuffs in the New England territory. Mr. Houth has had wide sales experience and diversified technical training with leading textile printing and finishing plants.

Appointed to the position of assistant director of advertising for **Emery Industries, Inc.**, is A. C. Fusaro. He will assist in the supervision of all Emery advertising at the local and national levels.

E. L. (Sam) Rodgers has been named by **Emkay Chemical Co.** to handle technical sales of the firm's line of specialties for the textile, paper, and leather trades in Georgia and Alabama.

Saco-Lowell Shops report that since its introduction in early 1956, more than 2,000 deliveries of the high speed Versa-matic drawing frame have been purchased by the 45 mills in the U. S., Canada, and abroad. Also, during 1956, more than 300 Model 56 high production Combers have been purchased by the combed yarn industry in the U. S. More than 700,000 spindles of the firm's Duo-Roth stay clean spinning changeovers are now operating, and Gwaltney spinning passed the half million spindle mark in 1956.

In the near future, **Atlanta Paper Co.** will become a wholly-owned subsidiary of The Mead Corp., to spearhead the latter firm's initial efforts in the packaging field. Atlanta Paper Co. expects to strengthen its position in the industry through Mead's greater research organization, assured raw material supply, and greater financial possibilities for future growth. President Arthur L. Harris has been proposed for election to the board of directors of the new parent firm. No

See how you save with . . .

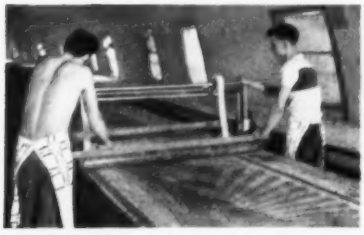
Tape that sticks on both sides!

"Scotch" Brand double-coated tapes save time and money on dozens of jobs throughout the mill.

They quickly, surely start winds of cloth on the roll. A strip of tape is placed lengthwise or around the empty tube. By pressing the end of the cloth against the tape, the wind is started. It's easy!

Taped tubes can be used many times before tape must be replaced.

You'll find many more ways to speed your production and cut waste in the free manual described below. Send for it today.



HOLD CLOTH to table for silk-screen printing with a "Scotch" Brand double-coated tape.

SECURE FELT or corduroy to race plates in the weaving department with double-coated tape.

SEND FOR free manual to Minnesota Mining and Manufacturing Company, Dept. OU-27, St. Paul 6, Minnesota.

REG. U.S. PAT. OFF.

SCOTCH BRAND Pressure-Sensitive Tapes

FOR THE TEXTILE AND APPAREL INDUSTRIES

PRODUCT OF 3M COMPANY RESEARCH

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CASTERS & WHEELS
Always SWIVEL and ROLL

All types of rubber treads - soft, medium and hard - for smooth operation on all kinds of floors. Featuring Neoprene rubber treads - resistant to steam, water, oxidation, oils and waxes and unaffected by most chemicals - expertly compounded to Darnell standards in our own factory.

OVER 4000 TYPES
OF CASTERS AND WHEELS

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36 NORTH CLINTON STREET, CHICAGO 6, ILLINOIS

SUPPLIERS News
WHAT THEY ARE DOING

change in administrative, sales, production, or executive staffs is anticipated.

Snap-on Tools Corp. has announced the appointment of Jim George as manager of its Atlanta branch and warehouse. This branch, under Mr. George's managership, works closely with the textile industry. One of the services offered is a free survey of textile mills and recommendations for specialized tools to best maintain the equipment. Mr. George was formerly branch manager at Charlotte, N. C.

The A. E. Staley Manufacturing Co. has completed installation of equipment in a new 10-story building at Decatur, Ill. Principal aim of the expansion is the improvement of starch quality through use of the latest developments in starch processing equipment, as well as provision for additional drying, blending, packing and loading facilities.

E. F. Koenig has been appointed technical representative of the technical services division of the research and technical department of **The Texas Co.** In his new position, Mr. Koenig will specialize in the field of additives for petroleum lubricants with headquarters at Beacon, N. Y.

Electro-Motion Corporation, 217 W. Morehead St., Charlotte, N. C., has been appointed as sales representative in the mid-South area for ultrasonic equipment produced by Acoustica Associates, Inc. John G. Swinney, president of Electro-Motion Corp., will introduce a wide variety of applications of the new "Silent Sound" ultrasonic devices which are used for textile processing, cleaning, degreasing, etc.

Owens-Corning Fiberglas Corp. has elected to its board Robert T. Stevens, president of J. P. Stevens & Co., Inc., and Howard J. Morgens, executive vice-president of The Procter & Gamble Co. The appointments were made to fill vacancies created when corporation by-laws were amended to increase board membership from six to eight. * * * William D. Crelley, formerly assistant sales manager of Sweet's Catalog Service of F. W. Dodge Corp., has been appointed advertising director.

Mr. Blake

Mr. Mahon
Lunkenheimer Co.

Sales representatives recently added to the staff of the **Lunkenheimer Co.** are Vincent P. Mahon, Chicago, formerly midwestern district manager for the Victaulic Co. of America, and Edward J. Blake, St. Louis, previously district sales representative for Thomas and Betts Co., Inc. Mr. Blake replaces Robert Thomson who has been transferred to Charleston, W. Va.

The industrial controls division of **Manning, Maxwell & Moore** announces the addition of Roger Gilliland as sales engineer. In charge of sales and service for American-Microsen electronic process control instruments on the west coast, with headquarters at the company's district office in Los Angeles, Mr. Gilliland was formerly application engineer for G. M. Giannini Co.

Henry F. Dever, president of Brown Instruments Division of **Minneapolis - Honeywell Regulator Co.,** has been given responsibility for directing the parent company's activities in the industrial control field. He will also counsel and coordinate the engineering and manufacturing operations of seven M-H divisions now active in this field and will continue to head up the Brown Instruments Division with headquarters in Philadelphia.

Johnson Service Co. has elevated John H. Colby to the newly created position of vice-president and general sales manager. He is responsible for the company's sales of automatic temperature and air conditioning control systems in schools, offices, hospitals, stores, hotels, institutions, public buildings, and industrial plants.

Appointed to the staff of **Emery Industries, Inc.,** is John V. Killheffer, Jr., formerly a chemist with the organic chemicals department of E. I. du Pont de Nemours & Co. He will be associated with the plasticizer group of the process research section, working with both new and current plasticizers.

Mr. Dollar
Warner Electric Brake

Mr. Kennard

Mr. Norman
R. E. L. Holt

Mr. Hill
Shawinigan

Mr. Bailey
Fairbanks

Mr. Koerner
Tyer Rubber

New Florida and southern Georgia sales representative for **Warner Electric Brake & Clutch Co.,** is Ray Dollar, previously employed by the Lockheed Aircraft Co. Mr. Dollar will work out of Atlanta at 3275-C Roswell Road, N. E. Reginald Kennard, formerly with the Aero Sales Co., has joined the staff as field sales representative. He will headquarter in the Washington, D. C. area, and resides at 803 W. Montgomery Ave., Rockville, Md.

Loading of a caustic soda barge marked completion of facilities in late December for water shipments of chlorine and caustic soda from the **Olin Mathieson Chemical Corp.** plant at McIntosh, Ala.

John P. Norman has been appointed Georgia-Alabama sales representative for **R. E. L. Holt, Jr. & Associates, Inc.** Mr. Norman previously was with West Point (Ga.) Manufacturing Co. as director of personnel, Lanett Bleachery & Dye Works. He will reside in West Point.

Closely following the first anniversary of its marketing department, **Shawinigan Resins Corp.** has announced the establishment of a southern district sales office at 1401 Peachtree St., N. E., in Atlanta, Ga. W. F. Hill is the newly appointed assistant district manager.

Joseph A. Bailey has been appointed as salesman for **The Fairbanks Co.** in the La., southern Miss. and the Mobile and Pensacola area. He was formerly engaged in the sale of mechanical equipment for Tropical Ice and Cold Storage Co. of New Orleans.

Elvin J. Koerner, 190 Woodland Rd., Woonsocket, R. I., has been appointed as a sales agent for the rubber covered roll division of **Tyer Rubber Co.** Mr. Koerner was formerly sales manager for Woonsocket Rubber and Plastics Products Co., Inc.

The Los Angeles office of the **Willcox & Gibbs Sewing Machine Co.** has moved into new and larger quarters at 1335 South Main St.

John P. MAGUIRE & COMPANY INC.

ON FACTS—

Let us not under-rate the value of a fact; it will one day flower into truth.

H. D. THOREAU, 1863

One of the most important services which we render to clients is to help them determine the truth that lies behind the facts of their business.

JOHN P. MAGUIRE & COMPANY, INC.

FACTORS

370 Fourth Avenue, New York
Murray Hill 3-4141

Mill results with the Compactor reported

■ IN THE spring of last year development of a machine to eliminate relaxation shrinkage in fabrics and create new surface effects and finishes was announced (see TEXTILE INDUSTRIES for May, 1956, p. 181). Called the Compactor,* it was conceived by Richard R. Walton of Boston, Mass., the inventor, collaborating with Fabric Research Laboratories of Dedham, Mass.

According to J. W. Malloy of Riggs & Lombard, Lowell, Mass., a firm licensed to build the machine, several have been installed in textile mills and are being used for the processing of cottons, synthetics, woolens and worsteds, with satisfactory shrinkage results and improved surface effects on upholstery fabrics, draperies, woolen and synthetic blankets, bedspreads, and the like.

During the recent annual meeting of the American Society of Mechanical Engineers, Mr. Malloy reported the following as some of the results achieved on Compactors installed in mills:

Two 72" machines are installed in finishing plants processing synthetic fabrics. These are placed in line with a padder and a tenter dryer. These installations have permitted compacting resin-cured fabrics by wetting out in the padder, processing in the Compactor, and drying on the frame.

Many different blends have been processed in this manner, such as 50/50 viscose and acetate fabrics, 85/15 viscose and nylon fabrics, 100% viscose fabrics, and the like where residual shrinkage in the control fabric has been in the range of 3 to 5% and, when processed by the Compactor, yielded residual shrinkage of under 1% on the first wash and under 2% after five washes.

A tape compacting machine has been in place since last May, and excellent results have been achieved.

Machines are also in place to process broad woven cotton goods as well as woolens and worsteds which are undergoing initial trials at this time. Preliminary results are most encouraging.

With the installations in the cotton field, very impressive surface effects have been obtained; and, more especially in patterned or nubby goods, designs have been accented in addition to the removal of the shrinkage. While broadcloths and sheetings respond to the shrinkproofing, the shiny, pressed appearance required for this type of fabric is not present after compacting.

Although there are no production installations, corduroys and cords have been very successfully stabilized, and in both of these fabrics the surfaces have been accentuated rather than flattened or pressed as in other processes.

In a woolen mill installation, the interest is more in the finish or hand, draping qualities, bulk and weight increase, rather than stabilization. The compacting unit will not prevent felting, so that in woolens a chlorination process or resin treatment is necessary before stabilizing the fabric. Very interesting surface-effects have been achieved and this surface interest has been of extreme value in these woolens. Because of this compacting process, in certain instances a reduction in number of picks may be considered to reduce the cost of the cloth.

Another development is the compacting of yarns, Mr. Malloy said. The bulk is increased, and in hand knitting yarns it has offered a very workable and attractive item. Cotton and woolen carpet yarns have been compacted with considerable increase in bulk, increase depending and varying with the twist and style of yarn.

*The compacting process is a licensed process with royalty being paid upon a poundage basis, royalty varying with the different types of fibers. License is controlled by Fabric Research Laboratories who also control the machine patent. Riggs & Lombard are building the machine under license from Fabric Research Laboratories.

HOW ANDERSON SHIELDS INCREASE SPINNING ROOM EFFICIENCY

Spinning rooms using Anderson Shields save time and money, and prevent disruption when unnecessary breaking, chipping, and splitting of bobbins and spools is avoided. In a year's time these items alone can amount to a surprising sum . . . Insist on Anderson and get the best protection metal shields afford . . . Watch your spinning room efficiency increase!

TEXTILE SHIELD CO., INC.

Metal Protection for Wood Turnings

J. N. ANDERSON, *Treas.*

LAWRENCE, MASS., U.S.A.

(Continued from page 101)

Don't get me wrong on this Japanese import situation. It is a serious threat. But if the same brains and the same energy in the textile industry had been used to sell textiles, the American industry couldn't have supplied the demand and we would have invited the Japanese to help us fill the orders.

The Japanese did not cause the American public to spend less than a fair share of its income on textiles. But the Japanese imports pointed up the fact that the American textile industry has been asleep at the switch from the standpoint of merchandising. Since the margin was so narrow in profits and demand, the least bit of imports from anywhere could have caused the trouble.

Maybe there is some good in the Japanese import problem, and though it appears to have been worked out satisfactorily after all of these months, we probably will look back on the Japs and their textiles as having served a very useful purpose — a sort of blessing in disguise.

IT REMINDS ME of the time years ago when the cotton farmer was a cotton farmer, and if a man was a cotton farmer he just didn't bother to plant anything else. He planted cotton everywhere that cotton would grow, even in his front yard. The fact that there was already too much cotton had no effect on the farmer, and the fact that the price of cotton was low had no effect on the farmer — he was a cotton farmer and he was going to plant cotton and all the cotton that he could, come high water and Hades.

In Alabama back in those days, they had cotton farmers just like cotton farmers in the other cotton producing states. But one section of the state was so dependent on cotton that if anything happened to the market the section was in bad shape. Well, the price of cotton went down, down, and down; and the cotton farmer planted cotton, cotton, cotton. It got so bad that what the farmer got for his cotton was much less than it cost to raise it. Still he planted cotton, because he was a cotton farmer.

Then one year, when the price of cotton was so low that nobody should have been planting cotton anyway, the boll weevil came along and ate up all the cotton. Then the farmers didn't have any cotton to sell and lose money on.

So the cotton farmers did something that they didn't think that they could do. They planted something else. They planted corn, potatoes, peanuts. They raised hay and cattle. They started truck farms. And lo and behold, the cotton farmers made more money than they ever made in their lives.

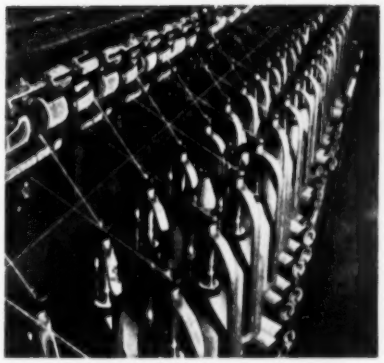
The farmers were so happy to have met up with the boll weevil that they raised a monument to him. And the monument is there today as a permanent record that it took the lowly boll weevil to wake folks up.

Maybe the Japanese situation will do the same. Let's blame the Japs for Pearl Harbor, let's blame them for making imitations of some of our American products, and let's blame them for any shortcomings that they have, but let's not blame them because the American consumer doesn't buy as much or as many textiles as we textile people think he should.

NOW, LET'S get to our own textile industry problem — that of selling the stuff we make.

To start with, let's stop this interindustry bickering and knocking of fibers by each other. If cotton wants to sell cotton, that's fine; if wool wants to sell wool, that's fine too; and if synthetics want to sell synthetics, that's fine also. But let each sell its own product without any unfavorable comparison with the other.

It has already been proved that the various fibers can live together as far as the mills are concerned and as far as the public is concerned. So there's no need for cotton or wool to worry if a mill which is running cotton occasionally puts in a sprinkle of synthetic fiber. The same maintains for the other fibers. If the product is a good one and if it serves the pur-



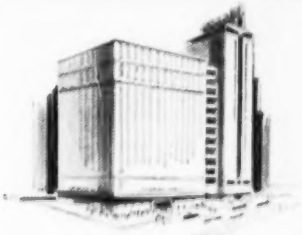
HALO TWIST CONDENSERS & ROVING PRETWISTERS FOR ALL SIZES OF FLYERS

In extensive tests actually in the mills, it has been proved that the HALO TWIST CONDENSER effects the following conditions: less ends down, less waste, heavier bobbins, more uniform yarn, up to 20% higher production, and lower costs.

Write for details today. Orders will be filled in one to ten days.

Tillicum
RUBBER COMPANY
LACEY WASHINGTON

Everything's New at
DINKLER HOTELS



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THE DINKLER-TUTWILER
Birmingham
THE DINKLER-JEFFERSON DAVIS
Montgomery
THE DINKLER-ANDREW JACKSON
Nashville
THE ST. CHARLES
New Orleans

Teletype Service to all Dinkler Hotels

DINKLER HOTELS
CARLING DINKLER, *President*
CARLING DINKLER, JR., *Vice President*

"COTTON"

LAB. BLENDER — NEP COUNT

Designed by the United States Dept. of Agriculture

Model CS-45

The Mechanical Cotton Blender effectively blends cotton samples 20 times faster than by hand. The principal feature is an adjustable feed plate in combination with a fluted feed roll which feeds a sample into a rotary blending cylinder. Blending or carding of dyed samples for color comparison is another use of this unit. (ASTM D1441-54)

Model CS-69

The Nep Test Machine provides a rapid and satisfactory method of preparing specimens of raw cotton for nep evaluation. The design of this machine incorporates the principal mechanical assemblies of textile carding machines in order to simulate commercial production methods. (ASTM D1446-53T)

CUSTOM SCIENTIFIC INSTRUMENTS, INC.

541 Devon Street, Kearny, N. J.

When a U. S. Representative visits your mill, he offers a world of useful data on MODERN traveler practice — plus the finest travelers it is possible to produce.

Prompt shipment from Providence, Greenville

U. S. RING TRAVELER CO.

HOME OFFICE & FACTORY: PROVIDENCE, R. I.
SOUTHERN OFFICE & WAREHOUSE: GREENVILLE, S. C.

Write, wire or phone nearest office.

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O. B. LAND—Athens, Ga.—Box 1187—Liberty 6-1647
L. H. MELLOR, JR.—Mid-Atlantic States—123 Treaty Rd.—Drexel Hill, Pa.—Phone Hilltop 6-1563
H. R. FISHER—Concord, N. C.—Box 83—Phone 2-8930
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CLASSIFIED ADS

BUSINESS—EMPLOYMENT—EQUIPMENT—PROFESSIONAL CARDS—OPPORTUNITIES

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Rates are net, payable in advance each month. Page is 3 columns, 10 inches deep—30 inches to page. Space measured by even inch vertically by 1, 2 or 3 columns in width. Column width 2⅛ inches.
Transient rate for display classified, $16.00 per inch.
Contract rate for space within 12 months period as follows:
12 inches ..... $12.00 Per Inch.

POSITION WANTED: 20c per word per insertion; minimum charge $4.00 Cash with order. Box Number address care of TEXTILE INDUSTRIES, 806 Peachtree St., N.E., Atlanta 5, Ga., count as eight words. Advertisements for help wanted, equipment for sale, for rent or wanted, and professional cards are accepted at display rates only.

BOBBINS, BOBBINS, BOBBINS

We buy and sell good used Quills, Slubber and Twister bobbins. Tell us what you need or what surplus bobbins you have for sale.

CHARLES G. STOVER COMPANY
West Point, Ga.

DON'T THROW BOBBINS AWAY.

We extend card room, warp, and filling bobbins to your specifications. Ream quills for top drive or do any custom bobbin work.

TEXTILE BOBBIN WORKS, INC.
P. O. Box 545
CLINTON, SOUTH CAROLINA

PROVEN DETROIT SALES ORGANIZATION DOING ANNUAL VOLUME OF 40 MILLION DOLLARS WANTS TO REPRESENT TEXTILE MILL WITH JACQUARD LOOMS INTERESTED IN EITHER BREAKING INTO OR INCREASING SALES OF UPHOLSTERY MATERIAL TO AUTOMOTIVE O. E. M. Reply to Box 788, TEXTILE INDUSTRIES, 806 Peachtree St., N.E., Atlanta 5, Georgia.

WANTED: TEXTILE ENGINEER, AROUND 30, WITH SPINNING EXPERIENCE. PREFERABLY WOOL. KNOWLEDGE OF CARBONIZING DESIRABLE BUT NOT REQUIRED. FOR FAST GROWING CALIFORNIA CARPET MILL. VERY GOOD OPPORTUNITY. Reply to Box 782, TEXTILE INDUSTRIES, 806 Peachtree Street, N.E., Atlanta 8, Georgia.

Check Tensions
in Yarns, Cords, Rubber
Quick Trigger Action
SAXL TENSION METER
Tensitron, Inc., Harvard, Mass.

CONFIDENTIAL EMPLOYMENT SERVICE

For textile mills seeking new personnel and mill executives seeking new positions. WE INVITE YOUR INQUIRIES.

CHARLES P. RAYMOND SERVICE, Inc.
294 Washington Street
Boston 8, Mass.
Telephone Liberty 2-6547

pose for the public and if the mill can sell its product, that should be enough for everyone.

If a mill man is in the textile business, he has access to information on basic merchandising for textiles. He should know that his mill must be modern, that the quality must be up to par, that he must be creative, that he must schedule production by demand, that he must exercise due care in the handling of customer complaints, that he must do research, and all of those things which are basic to almost any kind of manufacturing.

But the textile man's problem appears to be that the consumers just aren't spending enough of their dough for textiles. And when we say consumers, that takes in industrial as well as style textiles.

When folks don't buy, either they haven't got the money or they haven't got the desire. The record shows that people now have more money than they ever had, so that means they don't have the desire to buy textiles.

If the consumers don't have the desire to buy, then it's up to us, the textile industry, to create that desire.

I therefore propose that the entire textile industry go into radio and television with a national program that will sell textiles.

There is no industry in America that has the romantic background that the textile industry has; there is no industry that is of more interest to more people than textiles — it serves from the cradle to the grave; and there is no industry that needs a merchandising program more than textiles.

To do the job, the best talent in the field of merchandising should be employed. Heaven forbid that we simply get some of our convention speakers to cite a bunch of statistics and tell how badly the industry wants the public to buy.

Get a program that will interest people. Get a program that is so entertaining *and* so informative that people can't afford to miss it.

We have an industry that has a story to tell that will be of interest to all—if we get the right people to put it over. The subject material is unlimited and can be worked into the program in such a manner that there never need be a commercial. The program will serve as both a merchandising plan and an act of public relations. It will touch every segment of the country; it will reach people in every walk of life. It will serve a useful purpose for the consumer who listens and sees, and for the industry which sponsors it.

It can be done. It should be done. It must be done.

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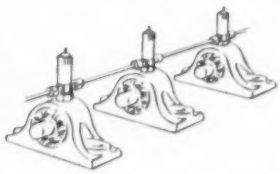

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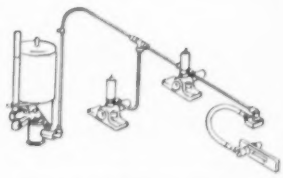

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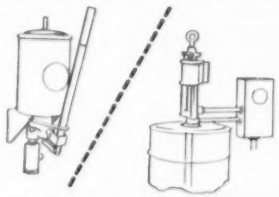

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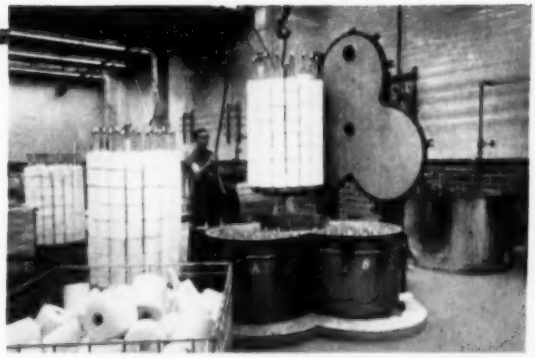

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